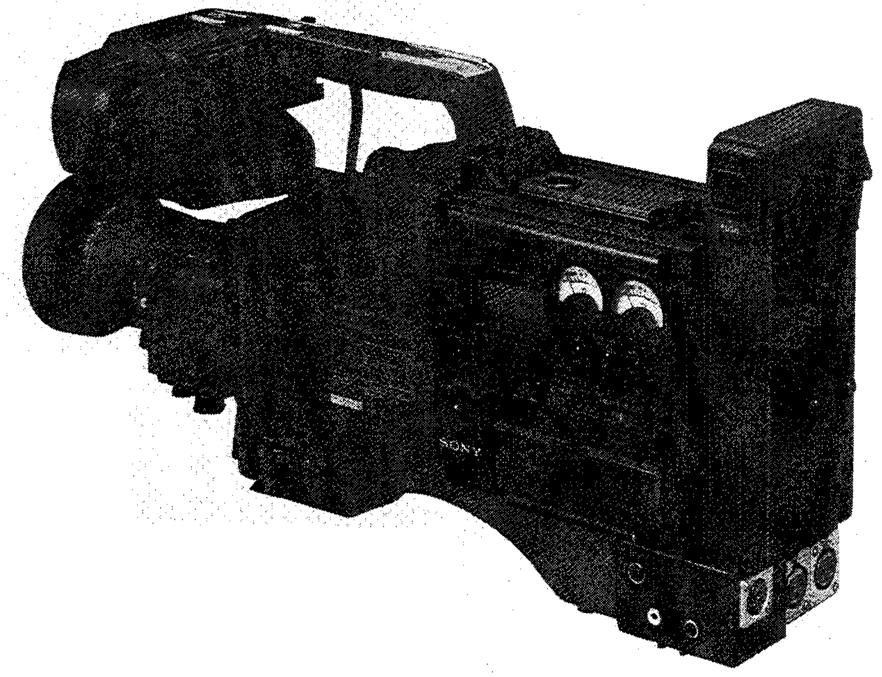
Hi8

VIDEOCASSETTE RECORDER

EVV-9000P



SONY®

SERVICE MANUAL

SPECIFICATION

General

Weight:	Approx. 1.8 kg (4 lb) Approx. 6.0 kg (13 lb 4 oz with the DXC-325P/NP-1A/cassette tape)
Power requirement:	12 V DC
Power consumption:	7.5 W (in record mode) 17.8 W (with the DXC-325P in recording mode)
Operating temperature:	–5°C to 45°C (23°F to 113°F)
Storage temperature:	–20°C to 60°C (–4°F to 140°F)
Videocassette:	Sony E5-HME, P5-MP series or equivalent
Tape speed:	Approx. 20.05 mm/sec.
Continuous operating time:	Approx. 60 min. (with the DXC-325P and one NP-1A)
REC or PB time:	90 min. (with E5-90HME/P5-90MP)
F FWD/REW time:	Approx. 7 min. (with E5-90HME/P5-90MP)

Video

Video recording system:	Rotary 2-head herical scan system Luminance: FM recording Chrominance: SC low-range conversion direct recording
Input:	Y: 1.0 Vp-p ±1.0 dB, 75 ohms, unbalanced, sync negative C: 0.300 Vp-p ±1.0 dB, 75 ohms, unbalanced
Output:	PAL composite video: 1.0 Vp-p ±1.0 dB, 75 ohms, unbalanced, sync negative
Horizontal resolution: (color/monochrome)	Hi8 mode: 400 TV lines Standard mode: 240 TV lines
S/N ratio: (color)	Hi8 mode: 44 dB Standard mode: 44 dB

Audio

Input: (0 dBu = 0.775 Vrms)	AUDIO CH-1/CH-2 (XLR 3-pin, female) Mic: –60 dBu, more than 3 kilohms, balanced Line: +4 dBu, more than 10 kilohms, balanced
Output:	AUDIO OUT (phono jack): –10 dBu (at 47-Kilohm load), unbalanced EARPHONE: Level adjustable (max –18dBu) 8-ohm load
Frequency response:	AFM: 30 Hz to 15 kHz PCM: 20 Hz to 15 kHz
Dynamic range:	PCM: more than 80 dB

Connectors

Video/Audio/Control/Power:	
(Input/output)	50-pin connector × 1
Video	
(Output)	VIDEO OUT (BNC) × 1 VIDEO OUT (phono jack) × 1
Audio:	
(Output)	AUDIO OUT (phono jack) × 1
(Input)	AUDIO CH-1 (XLR 3-pin, female) × 1 AUDIO CH-2 (XLR 3-pin, female) × 1
(Output)	EARPHONE (minijack) × 1 for an 8-ohm earphone
Power:	
(Input)	DC IN 12 V (XLR 4-pin)
(Output)	RFU DC OUT × 1 Special minijack, 5 V DC

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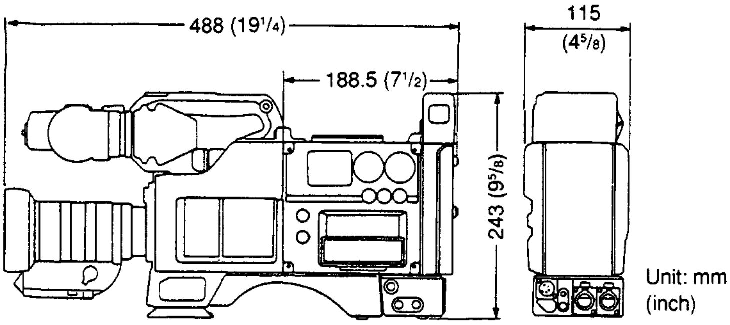


- Design and specifications are subject to change without notice.

Supplied accessories

Guide (1)
Shoulder strap (1), Metal mount (1)
Screws: M4 x 6 (2), M4 x 12 (2), cleaning cassette V8-5CLHSP (1)
Operation manual (1)

Not supplied accessories

RF modulator: RFU-89 EA/ASA
Rechargeable battery: NP-1A/1B
Camera adaptor: CMA-8CE
Battery charger: BC-1WA/1WB
8mm videocassette tape: E5-HME/P5-MP series
Cleaning cassette: V8-25CLH
Carrying case: LC-420

SECTION 1
GENERAL DISCRIPTION

1-1. FEATURES

Hi8 format for high quality picture

The Hi8 video system gives much better picture quality than standard 8 mm video system. For Hi8 recording, Hi8 ME (Metal Evaporated) videocassettes must be used. The EVV-9000P is provided with both Hi8 and standard record/ playback mode. The cassette type is automatically detected. And the recorded mode is also automatically detected when playback.

Y/C separated video input

Conventionally, video equipment exchanges the composite video signal containing the luminance (Y) signal and the chrominance (C) signal mixed. The composite video signal is liable to produce interference resulting in picture quality loss. The EVV-9000P, on the contrary, uses the Y/C separated video input, which minimizes flickers and color blur. Sharpness is enhanced to such an extent that hair and fine stripes are clearly visible.

One AFM and two PCM audio channels

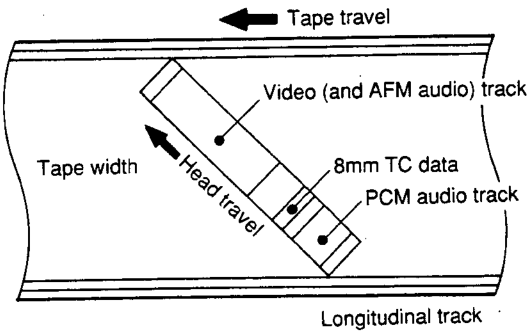
The EVV-9000P provides high quality audio with its monaural AFM and stereo PCM recording system.

Built-in 8 mm time code generator

The 8 mm time code is recorded onto a tape for precise editing reference.

8 mm tape format

The video, audio and time code signals are recorded on the 8 mm video tape as follows.



8mm time code

The 8 mm time code has been developed to record the absolute frame address onto the tape for precise editing reference. The 8 mm time code is digitally recorded by units of hour, minute, second and frame by the video heads.

Note

The 8 mm time code is used only for 8 mm format. It is not compatible with time codes recorded in other time code format.

Hi8 (High Eight) Video System

The 8mm video system uses metal tape, so it can record a large amount of information and give enhanced picture quality. The Hi8 video system is based on the 8mm video system but has improved the picture quality.

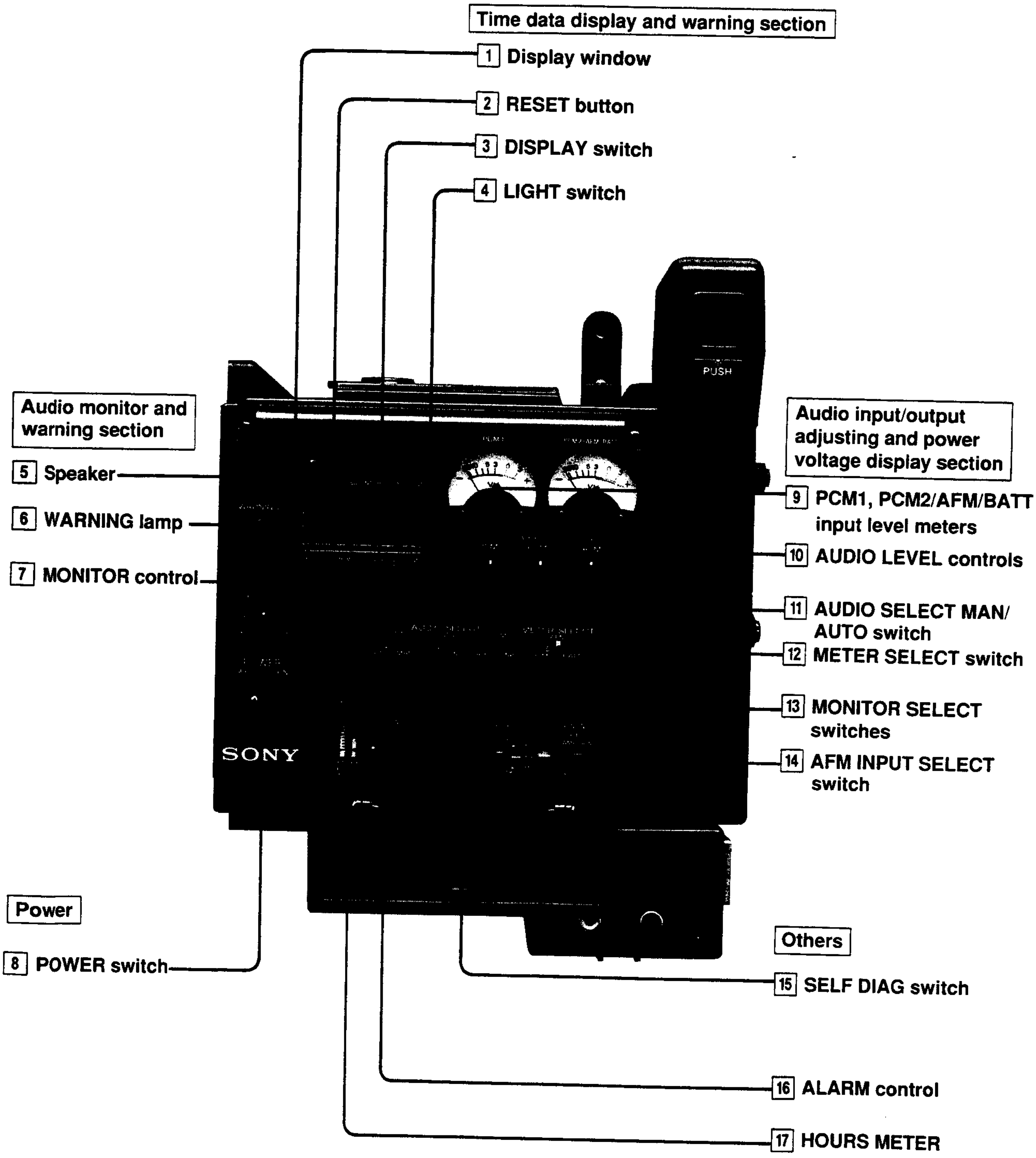
High Quality Picture

In the Hi8 format, the luminance carrier frequency is shifted up from 5.0 MHz of the standard 8mm format to 7.0 MHz at center carrier level to realize more than 400 TV lines of horizontal resolution. The FM deviation expanded from 1.2 MHz to 2.0 MHz greatly improves S/N ratio. Thus, the EVV-9000 offers such effects as recording more detailed visual information and less noise at the edges of objects in the picture.
In addition, the new TSS (Tilted Sendust Sputtered) head achieves 2dB higher output than the conventional head, and a new pre-emphasis system together with a high white clip level (220%) can offer more precise reproduction.

Use of High Grade Tape Corresponding to the Hi8 Video System

Metal evaporated tape is ideal for video systems because it has large magnetic energy that enables high-density recording. The Hi8 video cassette recorder uses such high-grade tape covering a wide frequency range, to achieve a high-quality video signal for recording/playback.

1-2. LOCATION AND FUNCTION OF PARTS AND CONTROLS


Time data display and warning section
1 Display window
2 RESET button
3 DISPLAY switch
4 LIGHT switch
Audio monitor and warning section
5 Speaker
6 WARNING lamp
7 MONITOR control
Audio input/output adjusting and power voltage display section
9 PCM1, PCM2/AFM/BATT input level meters
10 AUDIO LEVEL controls
11 AUDIO SELECT MAN/AUTO switch
12 METER SELECT switch
13 MONITOR SELECT switches
14 AFM INPUT SELECT switch
Power
8 POWER switch
Others
15 SELF DIAG switch
16 ALARM control
17 HOURS METER
PUSH
SONY

[1] Display window

Setting or condition	Displayed content
DISPLAY switch [3]: TC	Time code (See page 1-1.)
DISPLAY switch [3]: COUNTER	Tape running time
When an error occurs, see to "Warning System" (page 30)	■ (warning cursor)

[2] RESET button

Setting of DISPLAY [3]	Indication to be reset
TC	Time code on the display window [1] 1)
COUNTER	Tape running time on the display window [1] 2)

1) See "Recording the 8mm time code" (page 1-8).
2) The tape running time indication can be reset during recording or playback.

[3] DISPLAY switch

Selects indication on the display window [1].

[4] LIGHT switch

Set the switch to ON to illuminate the display window [1] and PCM1, PCM2/AFM/BATT input level meters [9]. Set the switch to OFF to turn off the illumination.

[5] Speaker

VTR mode	Sound through the speaker 1)
During recording	Sound in the E-E mode2) Warning beep 3)
During playback	Played-back sound
Other modes	Sound in E-E mode 2) Warning beep 3)

1) When you connect an earphone to EARPHONE jack [28], the sound through the speaker is automatically cut.
2) E-E (Electric-to-Electric) mode
   The sound of an input audio signal which passed through the amplifier in the VTR without passing magnetic converting circuits such as a head or tape is heard through the speaker. This E-E mode permits the input signal to be checked.
   When the safety tab on the cassette is slid out to prevent accidental erasure, or the POWER switch on the video camera is set to OFF, no sound will come from the speaker.
3) See "Warning System", page 1-13.

[6] WARNING lamp

Lights up or blinks when something wrong or undesirable has happened with your VTR. For details, see "Warning System", page 1-13.

[7] MONITOR control

Adjusts the audio playback level of the sound through the speaker [5] or EARPHONE jack [28]. When turning it fully counterclockwise, the monitor sound cannot be heard.

[8] POWER switch

Turns the power on and off. When the power is turned on, time code or tape running time is displayed on the display window [1].

[9] PCM1, PCM2/AFM/BATT input level meters

Level meter	Setting of METER SELECT [12]	Contens of display
PCM1		PCM1 recording level
PCM2/AFM/BATT	PCM 2	PCM2 recording level
	AFM	AFM recording level
	BATT	Power voltage level

[10] AUDIO LEVEL controls

Used to manually adjust the audio recording level of the following channels.

PCM1	PCM1 channel
PCM2	PCM2 channel
AFM	AFM channel

[11] AUDIO SELECT MAN/AUTO selector

Selects automatic or manual adjustment of the audio recording level.

AUTO	For automatic adjustment (The automatic gain control circuit will be activated to regulate the audio level to assure optimum recording.)
MAN	For manual adjustment by using the AUDIO LEVEL controls [10] (Any excessive input, if any, is blocked by a limiter to minimize distortion at the peaks.)

[12] METER SELECT switch

Selects display on the PCM1, PCM2/AFM/BATT input level meter [9].
See the description of the PCM1, PCM2/AFM/BATT input level meters [9].

[13] MONITOR SELECT switches

The right and left switches select the audio signal output from the AUDIO OUT connector [32] and the speaker [5] or the EARPHONE jack [29].

Left switch	Right switch	Audio signal output
AFM		Sound of the AFM channel
PCM	PCM1	Sound of the PCM1 channel
	MIX	Mixed sound of the PCM1 and PCM2 channels
	PCM2	Sound of the PCM2 channel

[14] AFM INPUT SELECT switch

Selects the audio signal to be recorded on the AFM and PCM1 channels.

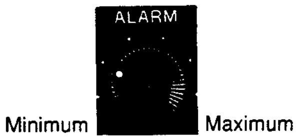
CAMERA MIC	AFM channel: the signal from the microphone on the video camera PCM1 channel: the signal input to the AUDIO CH-1 connector [25].
AUDIO CH-1	AFM channel: the signal input to the AUDIO CH-1 connector [25]. PCM1 channel: the signal from the microphone on the video camera.

15 SELF DIAG switch

Provided for maintenance service. Do not operate this switch.

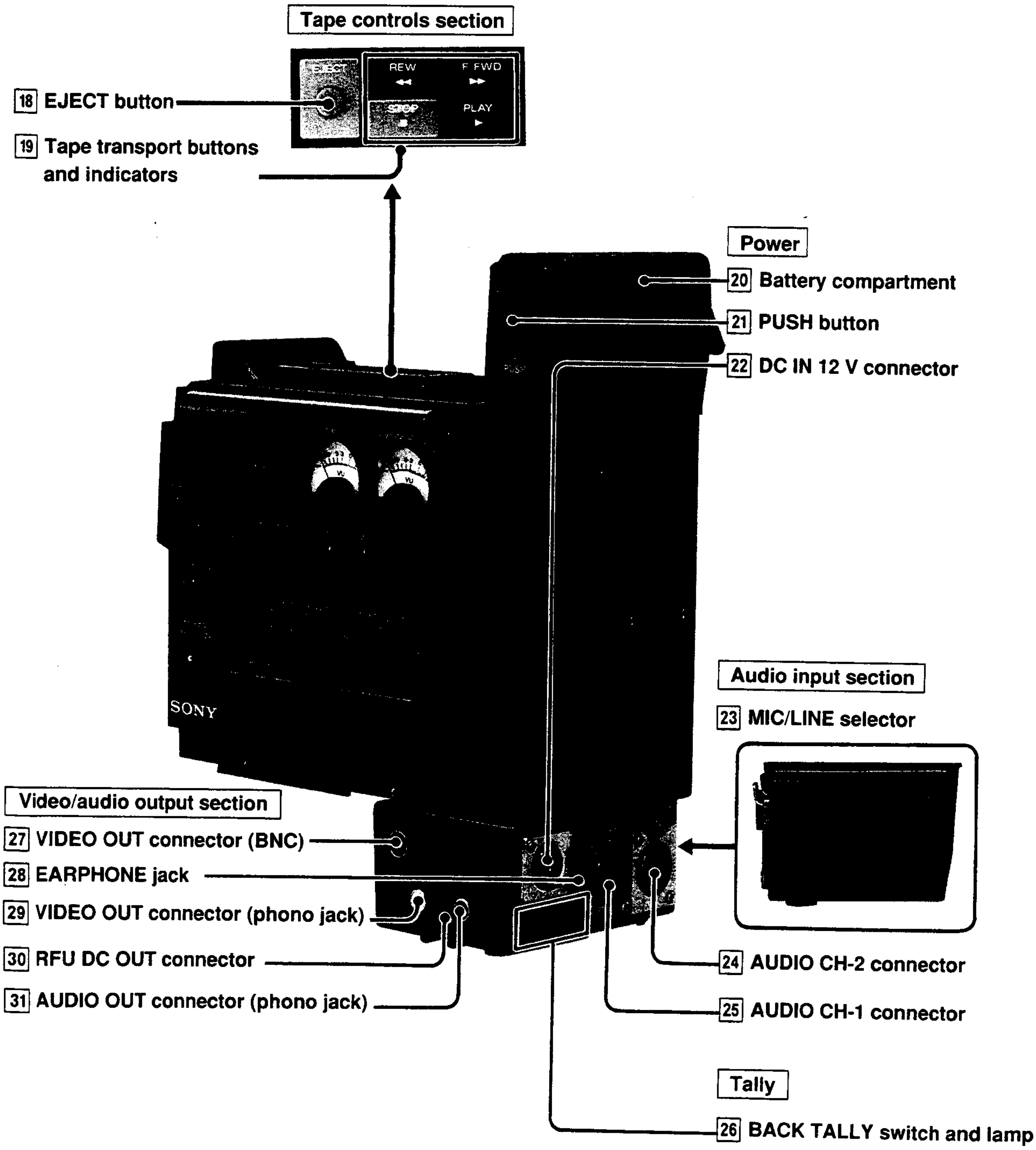
16 ALARM control

Adjusts the level of the warning beep. When turned fully counterclockwise, the warning beep cannot be heard.



17 HOURS METER

Shows the hours when the VTR has been in service. (One division represents 100 hours.) When the meter indicates maximum 1000 hours, contact you authorized Sony dealer to replace the meter and video heads with new ones.


Tape controls section
EJECT
REW
F FWD
STOP
PLAY
18 EJECT button
19 Tape transport buttons and indicators
Power
20 Battery compartment
21 PUSH button
22 DC IN 12 V connector
SONY
Audio input section
23 MIC/LINE selector
Video/audio output section
27 VIDEO OUT connector (BNC)
28 EARPHONE jack
29 VIDEO OUT connector (phono jack)
30 RFU DC OUT connector
31 AUDIO OUT connector (phono jack)
24 AUDIO CH-2 connector
25 AUDIO CH-1 connector
Tally
26 BACK TALLY switch and lamp

18 EJECT button 1)
Press down to open the cassette holder. The botton can be pushed with the lid either closed or open.

19 Tape transport buttons and indicators 1)

◀◀ REW (rewind) button and indicator
■ STOP button
▶▶ F FWD (fast forward) button and indicator
▶ PLAY button and indicator

1) These buttons are deactivated while the VTR is recording.

20 Battery compartment
Insert a charged NP-1A/1B battery pack (not supplied).

21 PUSH button
Press down to open the lid of the battery compartment.

22 DC IN 12V connector (XLR, 4pin)
Connect a CMA-8CE camera adaptor (not supplied) to operate the VTR with an AC power supply.

23 MIC/LINE selector

MIC	Set to this position when connecting external microphones to AUDIO CH-1 25 or AUDIO CH-2 24.
LINE	Set to this position when connecting the audio system to AUDIO CH-1 25 or AUDIO CH-2 24.

24 AUDIO CH-2 connector (XLR, 3-pin)

25 AUDIO CH-1 connector (XLR, 3-pin)

26 BACK TALLY switch and indicator
Set the switch to ON to show whether the VTR is recording or not recording to people behind the video camera.

Switch	Indicator
ON	Activated when recording
OFF	Not activated

27 VIDEO OUT connector (BNC) [1)]

28 EARPHONE jack (minijack) [1)]
Connect an earphone (not supplied).
You hear the same sound from the earphone as ones from the speaker 5.

29 VIDEO OUT connector (phono jack) [1)]

30 RFU DC OUT connector
Connect the RFU-89EA/ASA RFU modulator (not supplied) to this connector and VIDEO OUT connector 29 and AUDIO OUT connector 31 for connecting to the VHF antenna terminal of a TV receiver.

31 AUDIO OUT connector (phono jack) [1)]

1) When the safety tab on the cassette is slid out to prevent accidental erasure or the POWER switch on the video camera is set to OFF, the input video and audio signals which passed through the amplifier in the VTR without passing magnetic converting circuits such as a head or tape (in the E-E mode) do not appear at these connectors.

Recording the 8mm time code

The 8mm time code is automatically recorded as shown in the following table regardless of the DISPLAY switch setting.

Tape	Time code
Blank tape	Time code recording starts from "00:00:00:00"
Recorded tape	Time code follows the previously recorded time code value.

To reset the time code when recording

1 Insert the recorded tape cassette in the cassette holder.
2 Set the DISPLAY switch to TC.
3 Set the VTR to the recording pause mode or the stop mode and hold down the RESET button for two seconds or longer. The time code on the display window is reset to "00:00:00:00" and blinks. To cancel the reset mode, set the VTR to the mode other than recording pause mode or the stop mode.
4 Press the VTR button on the video camera or lens unit to start recording.

Note

8mm time code cannot be reset during recording or playback.

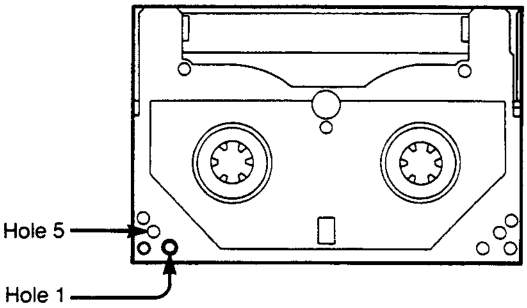
1-3. VIDEO CASSETTE TAPE IN USE

Cassette type and automatic change of recorde/playback mode

For Hi8 recording, use Hi8 ME tapes.
When using the standard 8mm video cassette tape, the standard recording and playback are performed. The cassette type and recording mode are automatically detected.

Cassette type detection

The VTR reads the holes in the cassette to determine what type of cassette it is.



Tape	Hole 1	Hole 5
MP (Standard 8mm cassette tape)	Close	Close
HME (Hi8 cassette tape)	Open	Close

Cassette type and recording/ playback time

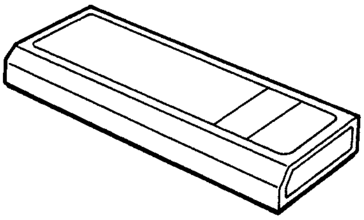
Cassette tape	Recording/playback time
P5-15MP	15 min.
E5-30HME, P5-30MP	30 min.
E5-60HME, P5-60MP	60 min.
E5-90HME, P5-90MP	90 min.

Notes

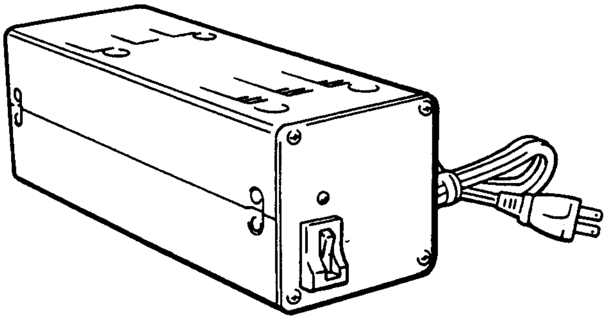
- Store the cassettes in their cases and keep them upright. This will keep dust out and prevent the tape unraveling.
- Never insert anything in the small holes on the rear of the cassette. These holes are used to sense the type and its thickness and whether the safety tab is out or in.

1-4. POWER SOURCE

The following battery packs or camera adaptor can be used with this unit.



NP-1A/1B battery pack



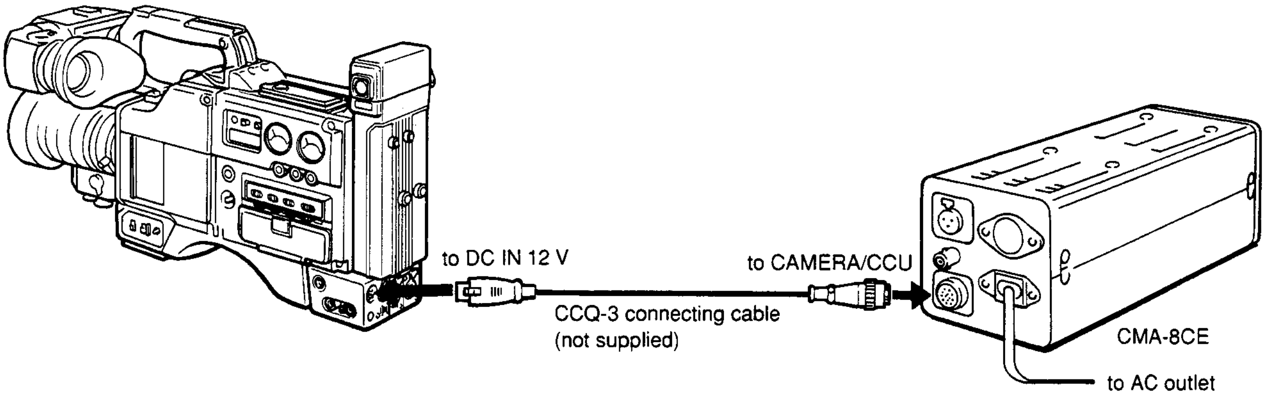
CMA-8CE Camera adaptor for AC operation

Power is supplied to the video camera via the 50-pin connector.

Caution

When the power source is disconnected during recording or playback, immediately reconnect it. Otherwise, the tape may be damaged.

Use the CMA-8CE (not supplied) camera adaptor.



to DC IN 12 V
to CAMERA/CCU
CCQ-3 connecting cable
(not supplied)
CMA-8CE
to AC outlet

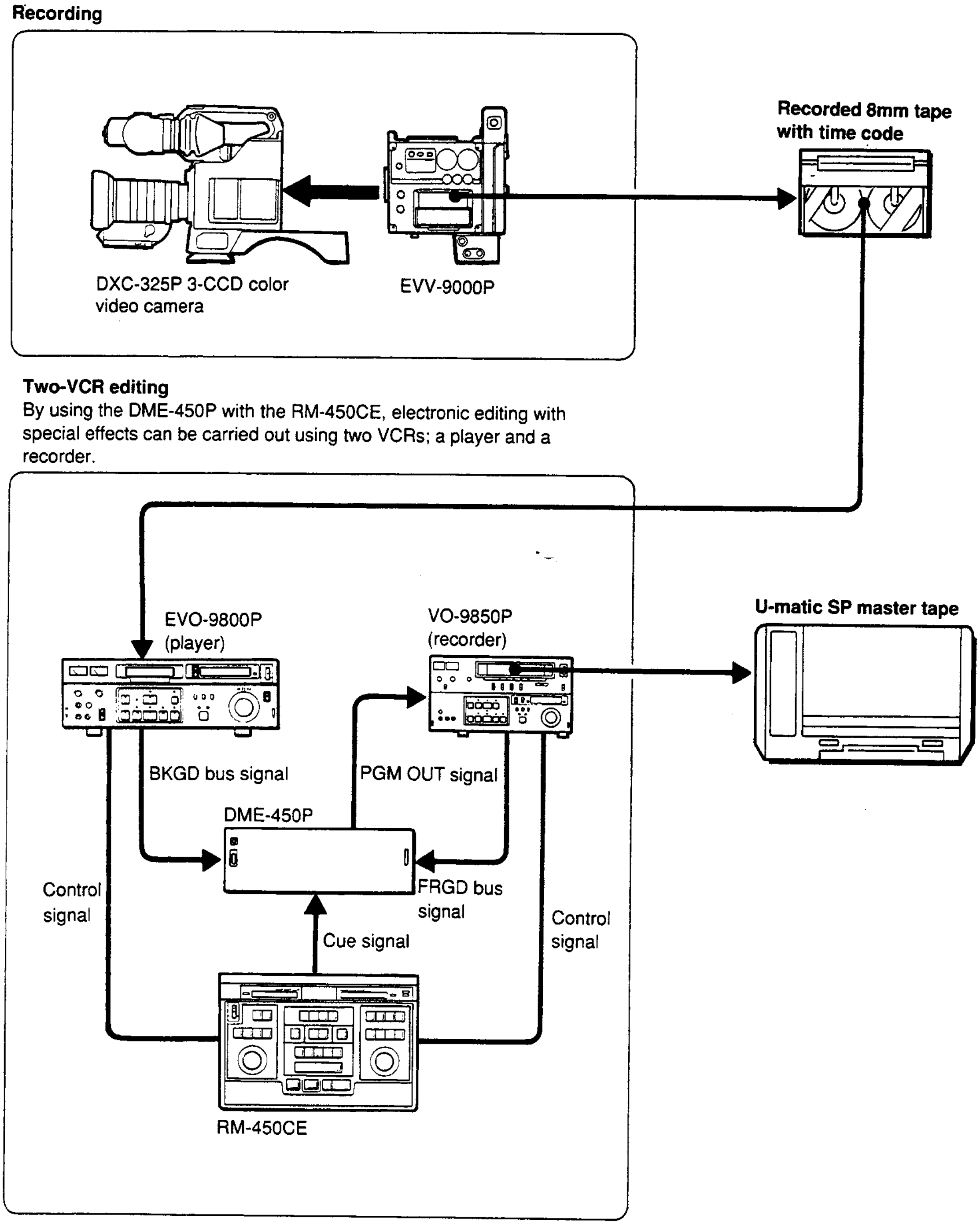
By connecting the CMA-8CE camera adaptor to the DC IN 12V connector, the power source is automatically changed from the battery pack to the CMA-8CE camera adaptor.

Caution

When changing the power source from the internal battery pack to the external AC power, set to stop mode and set the POWER switch on the VTR to OFF.

1-5. APPLICATION

Example: To edit the recorded 8mm tape with time code to make up the master U-matic SP tape:

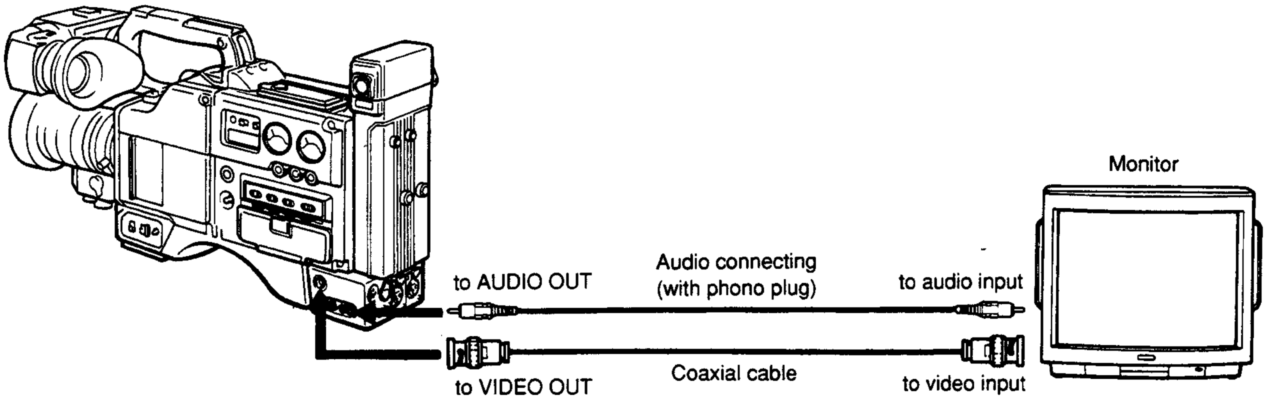

Recording
Recorded 8mm tape with time code
DXC-325P 3-CCD color video camera
EVV-9000P
Two-VCR editing
U-matic SP master tape
EVO-9800P (player)
VO-9850P (recorder)
BKGD bus signal
PGM OUT signal
DME-450P
Control signal
FRGD bus signal
Cue signal
Control signal
RM-450CE

By using the DME-450P with the RM-450CE, electronic editing with special effects can be carried out using two VCRs; a player and a recorder.

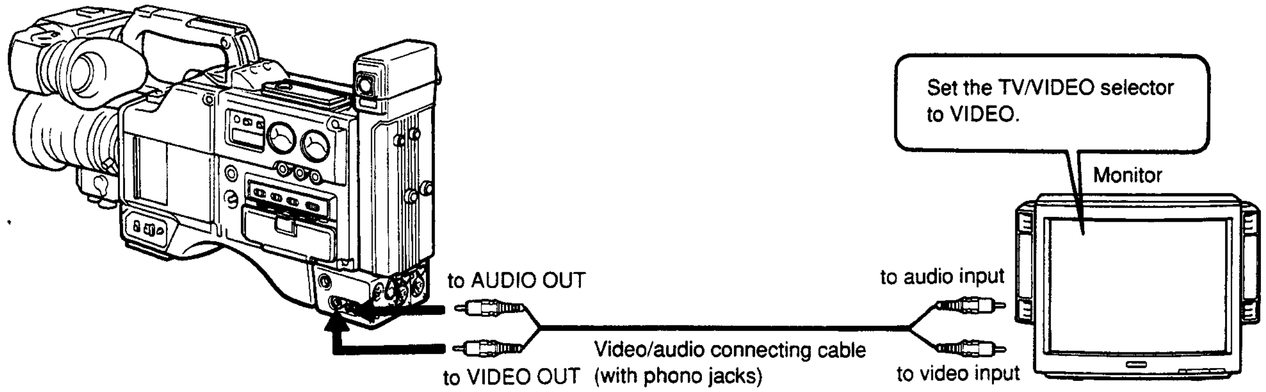
1-6. CONNECTING A MONITOR

The playback picture is monitored on the viewfinder screen and on the color monitor connected to the VTR.

Connecting a monitor equipped with a VIDEO IN connector (BNC)

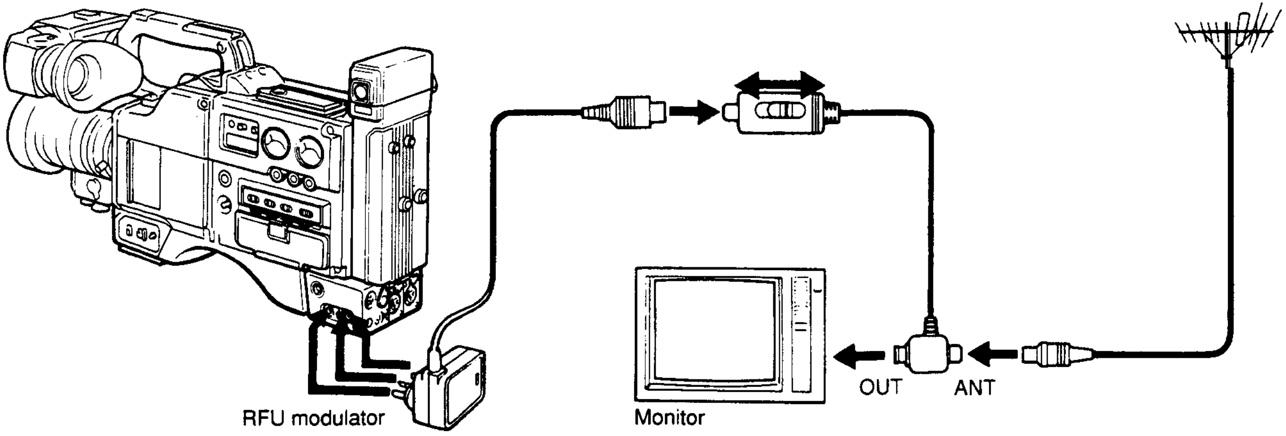

Monitor
to AUDIO OUT
Audio connecting (with phono plug)
to audio input
to VIDEO OUT
Coaxial cable
to video input

Connecting a monitor equipped with a VIDEO IN connector (Phono jack)


Set the TV/VIDEO selector to VIDEO.
Monitor
to AUDIO OUT
to audio input
Video/audio connecting cable (with phono jacks)
to VIDEO OUT
to video input

Connecting a monitor not equipped with audio/video input connectors

The RFU-89EA/ASA RFU modulator (not supplied) is required to connect a monitor not equipped with audio/video input connectors.


RFU modulator
Monitor
OUT
ANT

1-7. WARNING SYSTEM

The warning cursors and lamp, warning beep and tally lamps of camera serve to advise you of the VTR statuses indicated in the table below. In the rightmost column are described the corresponding tape transport statuses and resulting influences especially on the recording function. In general, if the tape transport stops, the VTR cannot continue the current operation. Actions you need to take in such case are also indicated in the same column.

Warning cursor		Warning lamp	Warning beep	Camera tally lamps REC/TALLY	VTR status	Tape transport status/Necessary action
RF	▬	✹	●))) ●))) ●))) ●)))	✹	Head clogging Defective recording system	The VTR continues to record, but recording may not be performed correctly. (This status is detected when the VTR is set in the record mode again from the recording pause mode.
	(In record mode)					Clean the head.
SERVO	▬	✹	●))) ●))) ●))) ●)))	✹	Irregularity in servo	Tape transport doesn't stop, but recording may not be performed correctly.
			(In record mode)			Check the connections.
HUMID	▬	☼	●)))))))))))))))))))))))	✹	Moisture condensation	In record mode, the VTR keeps recording except when the tape sticks to the head drum. If sticking of tape does happen or if the VTR has been in other mode than record mode, it enters into stop mode. Press down the EJECT button to remove the cassette.
						See "Notice on moisture condensation".
SLACK	▬	✹	●)))))))))))))))))))))))	✹	Tape slack	Tape transport stops.
						Press down the EJECT button and remove the cassette. If the cassette holder won't open, consult Sony's service personnel without turning off the power.
TAPE END	-▬-	✱	●))))))))))	✱	Near end	Tape transport continues operate. If the VTR has been in record mode, it keeps recording.
	(In record mode)					
	▬	☼	●)))))))))))))))))))))))	✹	Tape end	Tape transport stops.
						Replace the cassette with another.
BATT	-▬-	✱	●))))))))))	✱	Near end	Tape transport continues. If the VTR has been in record mode, it keeps recording.
	(In all modes)		(Except in playback mode)			
	▬	☼	●)))))))))))))))))))))))	✹	Battery end	Tape transport stops.
	(In all modes)					Replace the batteries with fully charged ones.

Meaning of the marks

Warning lamp		Warning tone		Warning cursor	
✹	Blinks at 4 Hz	●))))))))))	1 second interval	▬	Lighting
✱	Blinks at 1 Hz	●))) ●))) ●))) ●)))	1/4 second interval	-▬-	Blinking
☼	Lights up	●)))))))))))))))))))))))	Continuous tone		

When recording stops, the warning cursor, lamp and tone go out.

SECTION 2
SERVICE INFORMATION

2-1. ASSEMBLY OF VTR AND CAMERA

Assemble VTR and camera with four fixing screws as shown in fig. B.

(1) Install a guide shaft (supplied accessory of VTR) to the VTR.

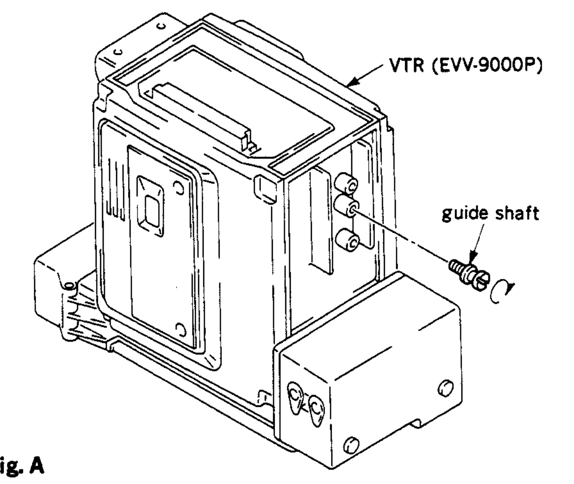

VTR (EVV-9000P)
guide shaft

Fig. A

(2) Put the guide shaft of the VTR into guide hole of the camera (DXC-325P). While moving the VTR in the direction of the arrow, connect 50P connector as shown in fig. B.

(3) Assemble the VTR and camera with four fixing screws (supplied accessory of VTR).

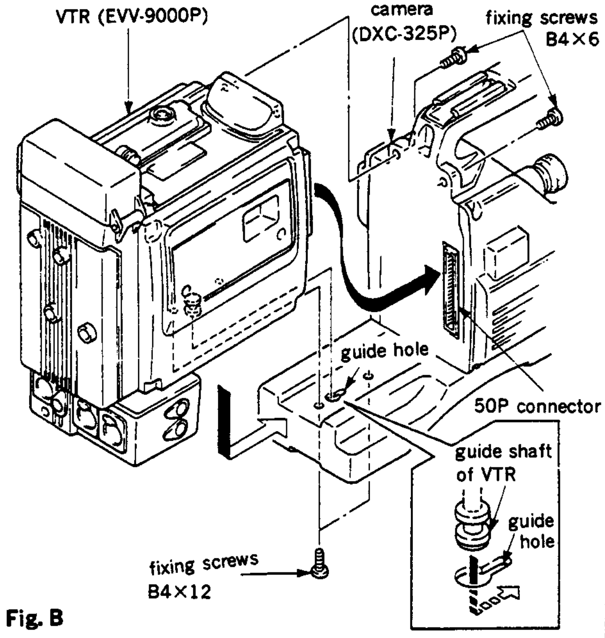

VTR (EVV-9000P)
camera (DXC-325P)
fixing screws B4×6
guide hole
50P connector
guide shaft of VTR
guide hole
fixing screws B4×12

Fig. B

If there isn't a hole on a camera (DXC-325P), use only four fixing screws. Do not use the guide shaft.

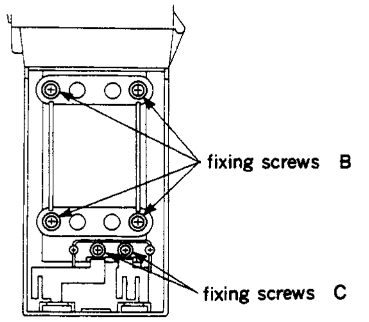
2-2. REMOVAL AND INSTALLATION OF CABINET

Battery Case

(1) Remove fixing screw A and remove the Battery Case Lid in the direction of the arrow.

(2) Remove four fixing screws B as shown in the figure.

(3) Loosen two fixing screws C and remove the Battery Case. The fixing screws C cannnot remove from the Battery Case because of stoppers.


fixing screws B
fixing screws C

Side Panel (Right) Assembly

(1) Loosen four fixing screws and open the Side Panel (Right) Assembly. The four fixing screws cannot remove from the Side Panel (Right) Assembly because of stoppers.

(2) Remove the two fixing screws of the Shield Plate and open the AU-136P Board.

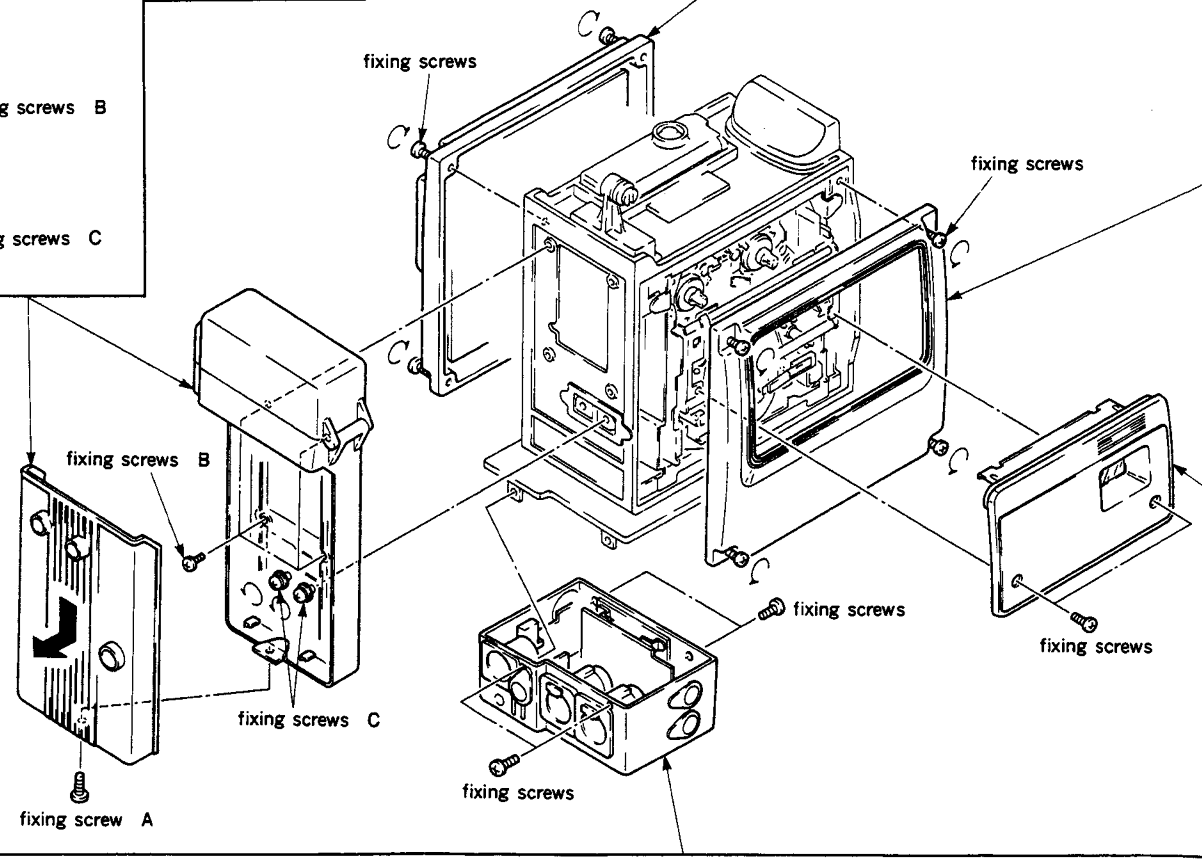
(3) Disconnect the connector CN11 of the speaker harness, and CN12 and CN13 of the meter harness from the FP-37 Board.

(4) Disconnect the connector CN1 of the power switch harness from the PS-209 Board.

(5) Remove the five knobs (PCM1, PCM2, AFM, MONITOR, ALARM) from outside of the Side Panel (Right) Assembly without making damage.

(6) Remove three fixing screws and two board supports of the FP-37 Board. Remove the AU-136P and FP-37 Boards from the Side Panel (Right) Assembly.

When installing, be careful to pinch harnesses with the Side Panel (Right) Assembly.


fixing screws
fixing screws
fixing screws B
fixing screws C
fixing screw A
fixing screws
fixing screws
fixing screws

Side Panel (Left) Assembly

(1) Remove Cassette Lid.

(2) Loosen four fixing screws and remove Side Panel (Left) Assembly. The four fixing screws cannot remove from the Side Panel (Left) Assembly because of stoppers.

Install first the Side Panel (Left) Assembly and then install the Cassette Lid.

Cassette Lid

(1) Remove the two fixing screws and remove the Cassette Lid.

Install first the Side Panel (Left) Assembly and then install the Cassette Lid.

Connector Box

(1) Pull out the Mechanical Deck Block referring to Section 2-3. Disconnect the connector CN2 (3pin) on the PS-209 Board.

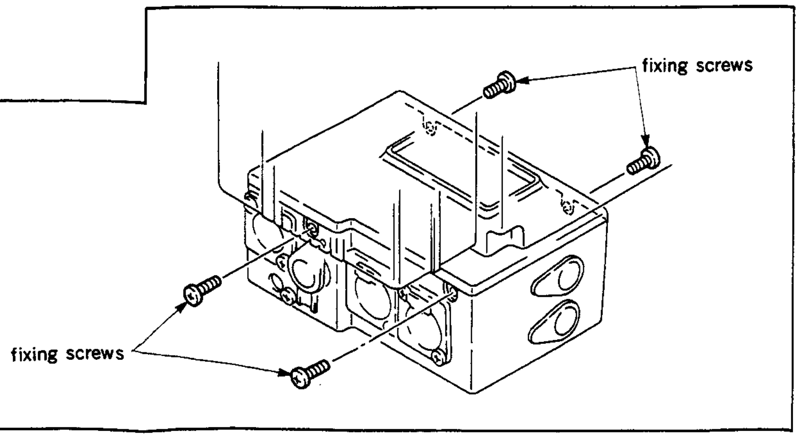
(2) Open the Side Panel (Right) Assembly.

(3) Disconnect the connectors CN1 (3pin), CN2 (6pin), CN3 (2pin) on the FP-37 Board.

(4) Remove four fixing screws and pull out the Connector Box.

(5) Disconnect the connectors CN5 (6pin) on the VA-96 Board, and CN3 (7pin) and CN6 (7pin) on the VA-102P Board.

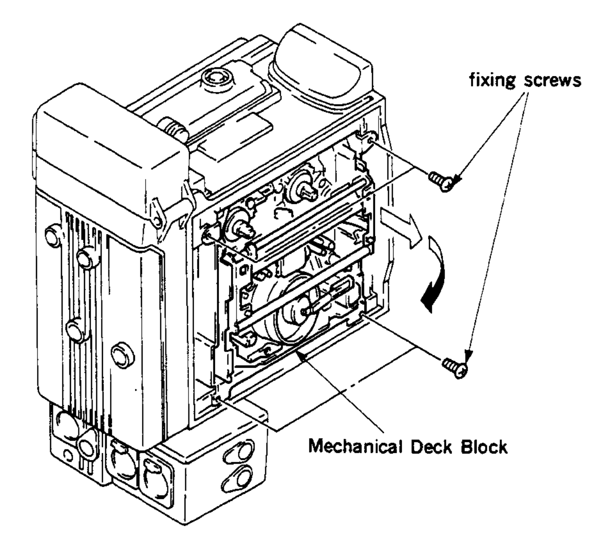
(6) While being careful not to cut harness, remove the Connector Box.


fixing screws
fixing screws

2-3. REMOVAL OF MECHANICAL DECK BLOCK

1. Remove the Cassette Lid and Side Panel (Left) Assembly referring to Section 2-2.
2. Remove four fixing screws as shown in the figure.
3. Pull out Mechanical Deck Block Assembly without making damage.
4. When replacing major parts, disconnect the following connectors and remove the Mechanical Deck.

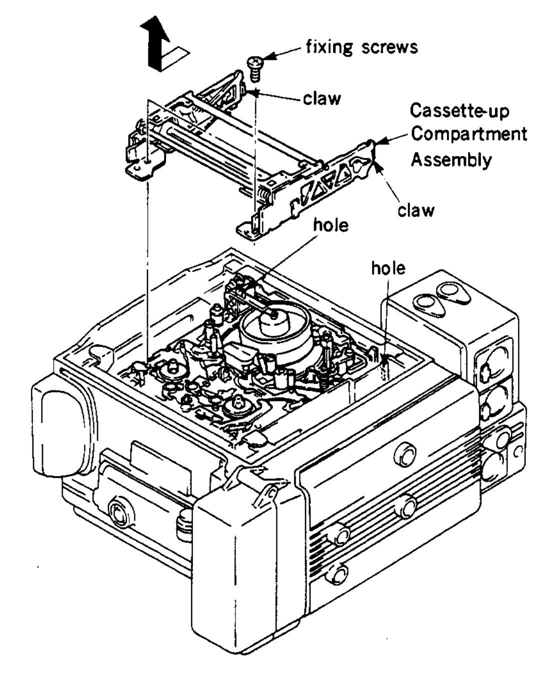
CN805/RP-56P Board
CN401, CN402, CN403/VO-32P Board
CN004, CN005, CN006, CN007, CN008/SS-43P Board


fixing screws
Mechanical Deck Block

2-4. REMOVAL AND INSTALLATION OF THE CASSETTE -UP COMPARTMENT

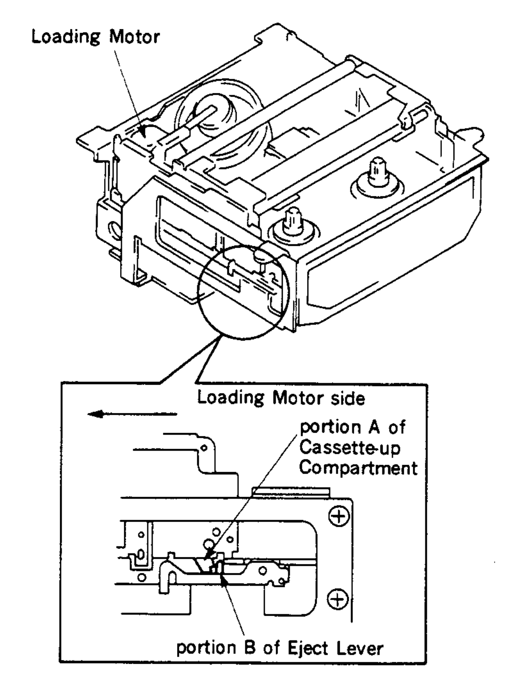
Removal:

1. Remove the Cassette Lid and Side Panel (Left) Assembly referring to Section 2-2.
2. Remove two fixing screws as shown in the figure and remove Cassette-up Compartment Assembly in the direction of the arrow.


fixing screws
claw
Cassette-up Compartment Assembly
claw
hole
hole

Installation:

1. Pull out the Mechanical Deck referring to Section 2-3.
2. Turn POWER ON referring to Section 2-11 and set to the threading mode.
3. After the threading mode is completed, turn POWER OFF.
4. Put the two claws of the Cassette-up Compartment to the holes. Install the Cassette-up Compartment with two fixing screws. Check that the A portion of Cassette -up Compartment and B portion of Eject Lever are placed as shown in the figure.
5. Turn POWER ON and check that the Cassette-up Compartment is up by pushing the EJECT button.


Loading Motor
Loading Motor side
portion A of Cassette-up Compartment
portion B of Eject Lever

2-5. SERVICE OF PRINTED CIRCUIT BOARDS

2-5-1. Removal of VO-32P, VO-33P and SS-43P Boards

1. Remove the Cassette Lid and Side Panel (Left) Assembly referring to Section 2-2.
2. Pull out the Mechanical Deck Block referring to Section 2-3.
3. Remove a fixing screw as shown in fig. A and open the RP-56P Board in the direction of the arrows A and B in order.
4. Remove two fixing screws and release the claw. Open the VO-33P Board. (Fig. B)
5. Release two claws as shown in fig. C and open the VO-32P Board.

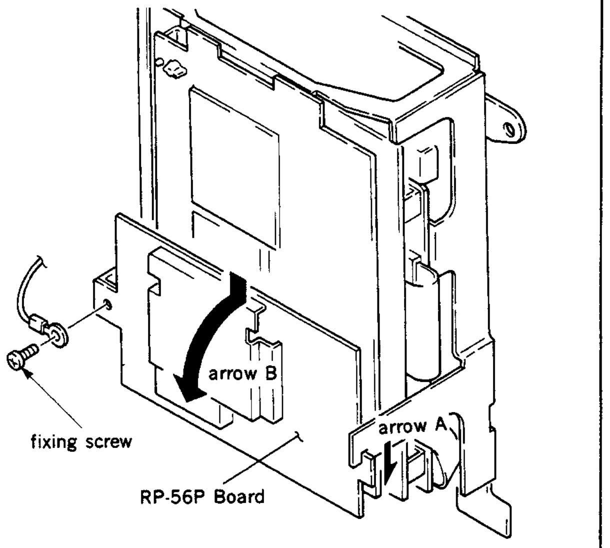

arrow B
fixing screw
arrow A
RP-56P Board

Fig. A

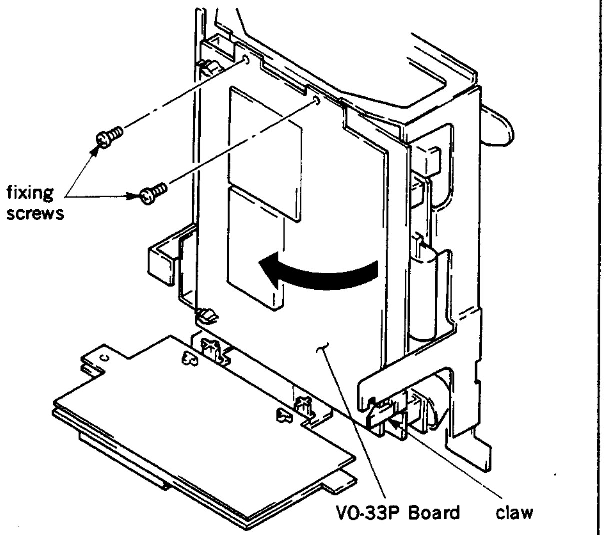

fixing screws
VO-33P Board
claw

Fig. B

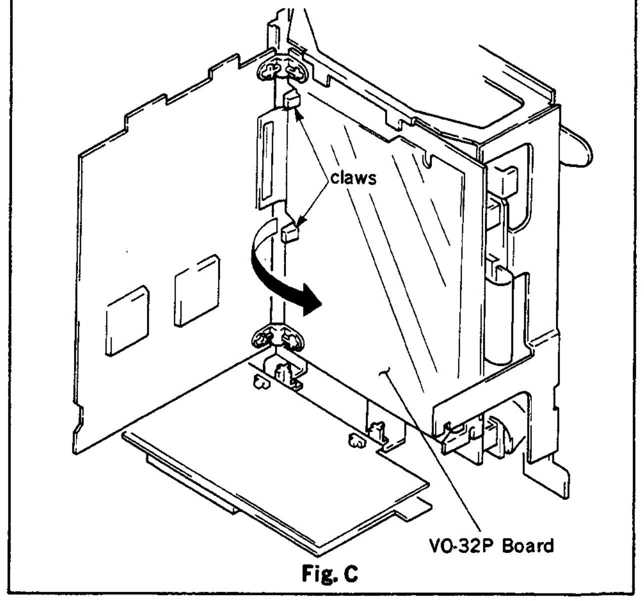
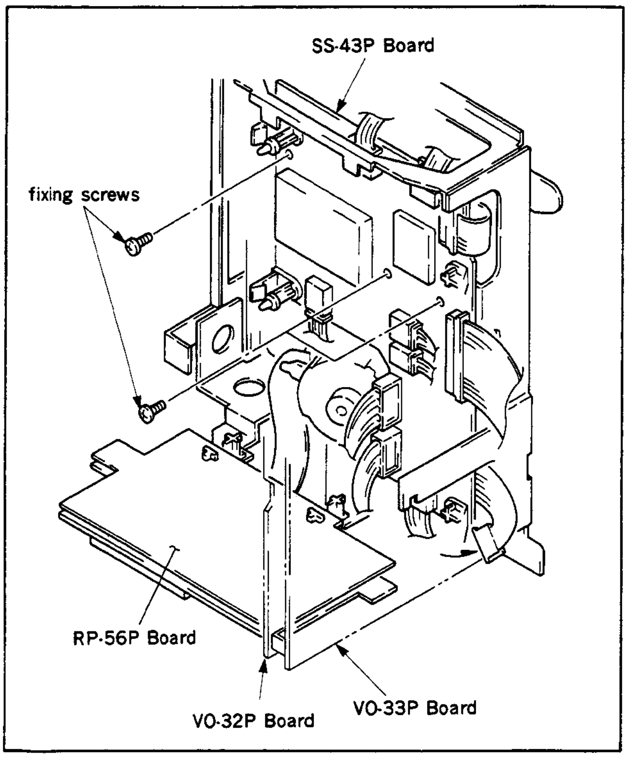

claws
VO-32P Board

Fig. C

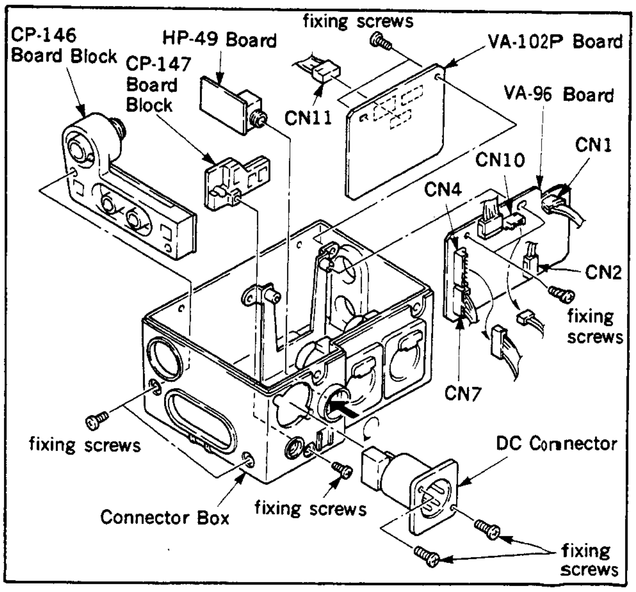
6. Disconnect the FP-161 Flexible Board (CN010) on the SS-43P Board from the Capstan Motor and disconnect the connectors CN002, CN011, CN012, CN003, CN001 on the SS-43P Board.
7. Disconnect the connectors CN803, CN804 on the RP-56P Board.
8. Remove three fixing screws as shown in the figure and remove the SS-43P Board with the VO-32P and VO-33P Boards.

   Note: Do not lose the two Board Spacers B between the SS-43P Board and Mechanical Deck Block.


SS-43P Board
fixing screws
RP-56P Board
VO-32P Board
VO-33P Board

2-5-2. Removal of CP-146, CP-147, HP-49, VA-96 and VA-102P Boards

1. Remove the Connector Box referring to Section 2-2.
2. Remove two fixing screws as shown in the figure and remove DC Connector.
3. Disconnect the connector CN10 on the VA-96 Board.
4. Remove two fixing screws and pull out the VA-96 Board. Disconnect the connectors CN1, CN2, CN4 and remove the VA-96 Board.
5. Remove two fixing screws. Remove the VA-102P Board and disconnect the connector CN11.
6. Remove two fixing screws and remove the CP-146 Board Block.
7. Remove fixing screw and remove the CP-147 Board Block.
8. Turn nut of jack counterclockwise with a pair of tweezers from the hole in the diredtion of the arrow and remove the HP-49 Board.


CP-146
Board Block
HP-49 Board
CP-147
Board
Block
fixing screws
VA-102P Board
VA-96 Board
CN11
CN1
CN10
CN4
CN2
fixing
screws
CN7
fixing screws
DC Connector
Connector Box
fixing screws
fixing
screws

2-5-3. Opening of FP-37 and AU-136P Boards

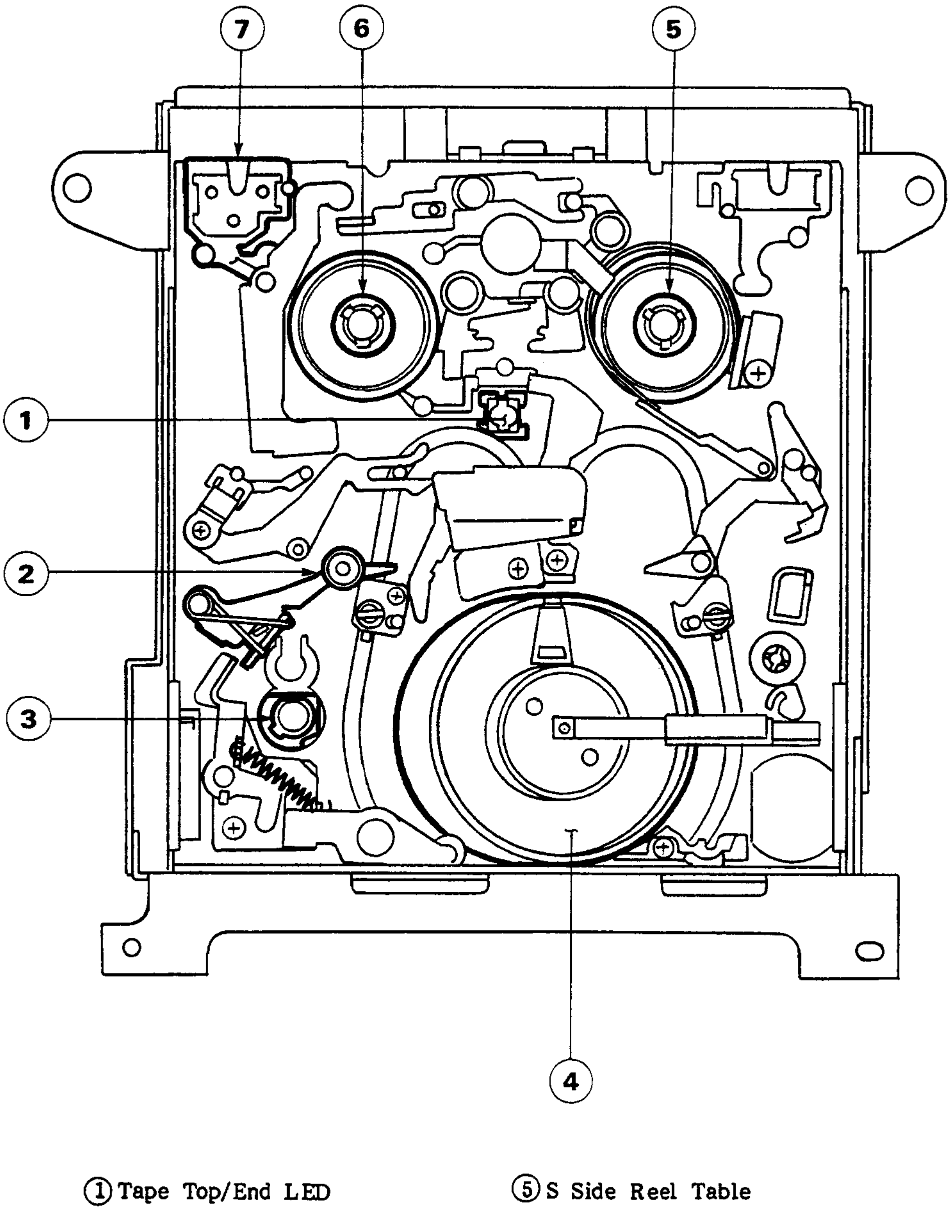
1. Loosen four fixing screws and open the Side Panel (Right) Assembly.
2. Remove two fixing screws of the Shield Plate and open the AU-136P Board.

Removal procedure of FP-37 Board refers to Section 2-2.

2-6. LOCATION OF MAIN PARTS

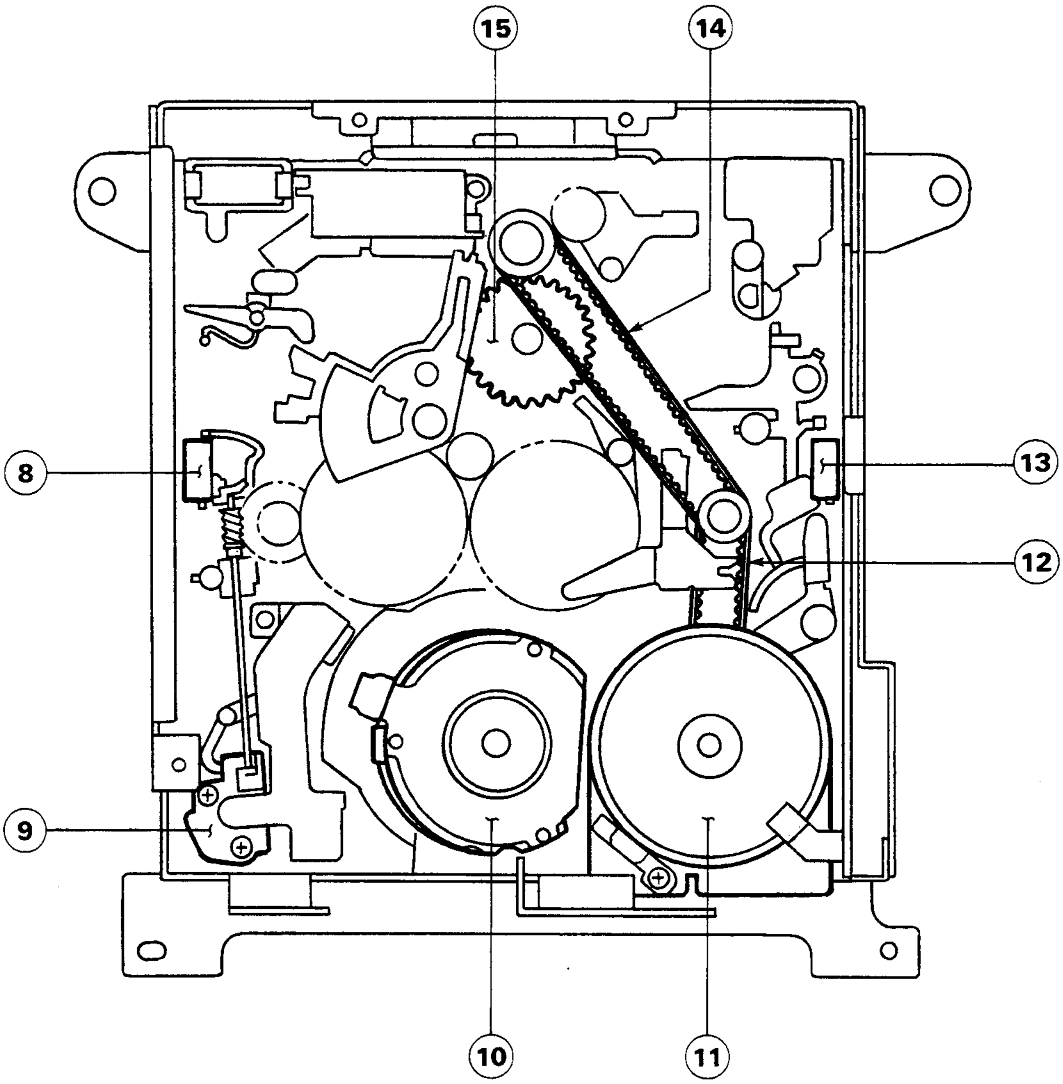
2-6-1. Location of Main Mechanical Parts/Components

TOP VIEW



① Tape Top/End LED	⑤ S Side Reel Table
② Pinch Roller Assembly	⑥ T Side Reel Table
③ Capstan Shaft	⑦ RECOG. switch
④ Drum Assembly	

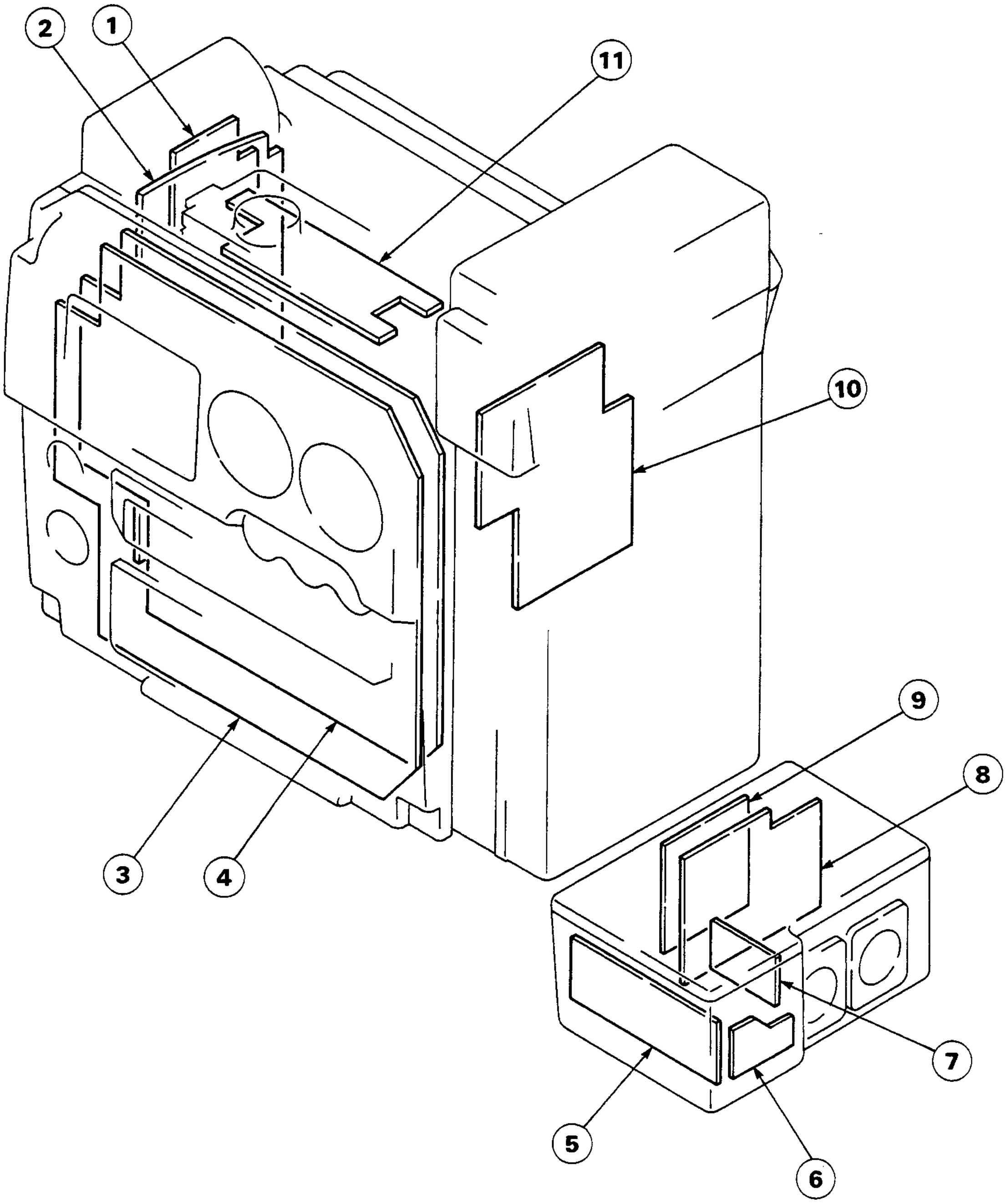
BOTTOM VIEW



15
14
8
13
12
9
10
11

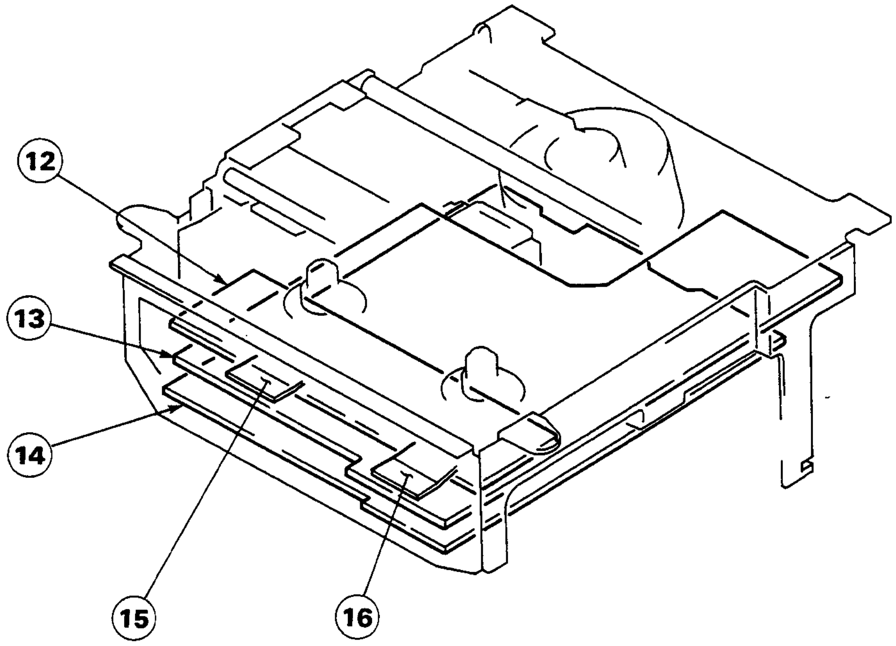
⑧ Tape End Sensor	⑫ Timing Belt S
⑨ Loading Motor Assembly	⑬ Tape Top Sensor
⑩ Drum Assembly	⑭ Timing Belt L
⑪ Capstan Motor	⑮ RK Gear Assembly

2-6-2. Location of Printed Circuit Boards

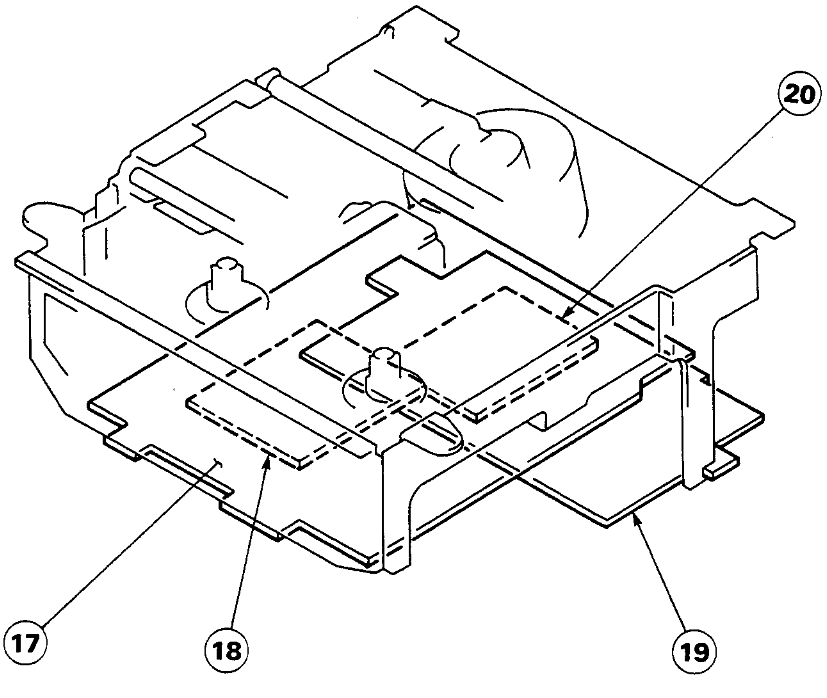


① CC-43 Board	⑦ HP-49 Board
② SY-153P Board	⑧ VA-96 Board
③ FP-37 Board	⑨ VA-102P Board
④ AU-136P Board	⑩ PS-209 Board
⑤ CP-146 Board	⑪ KY-191 Board
⑥ CP-147 Board	

MECHANICAL DECK



12
13
14
15
16



⑫	CC-44 Board	⑰	VO-33P Board
⑬	SS-43P Board	⑱	HD-8P Board
⑭	VO-32P Board	⑲	RP-56P Board
⑮	FP-89 Flexible Board	⑳	HR-3P Board
⑯	FP-90 Flexible Board		

2-7. PRINTED CIRCUIT BOARDS

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	RP-56P	HEAD AMP, REC Y/C/AFM/ ATF MIX
	HR-3P	REC/PB HEAD AMP
	VO-32P	Y PROCESS
	VO-33P	CHROMA PROCESS
	HD-8P	COMB FILTER
	CC-43	CAMERA CONNECTOR
	VA-102P	Y/C MIX
AUDIO	VA-96	XLR INPUT AMP
	FP-37	AUDIO INPUT/OUTPUT AMP
	AU-136P	PCM AUDIO PROCESS, AFM SIGNAL PROCESS
	HP-49	EARPHONE JACK
TIME CODE	FP-37	TIME CODE PROCESS
SYSCON SERVO	AU-136P	ATF SERVO
	SS-43P	SERVO SYSTEM, MECHANISM CONTROL
	SY-153P	SYSTEM CONTROL
	KY-191	FUNCTION KEY BOARD
	FP-89	MODE SW, TAPE END SENSOR
	FP-90	TAPE SELECT SW, TAPE TOP SENSOR
	CP-147	BACK TALLY
POWER	PS-209	DC-DC CONVERTER
Others	CP-146	CONNECTOR PANEL
	CC-44	TERMINAL

2-8. CONNECTORS

When external cables are connected to the various connectors of the connector box during maintenance, the hardware listed below or equivalents must be used.

PANEL INDICATION	CONNECTOR
VIDEO OUT (BNC)	1-560-069-11 PLUG, BNC, MALE
AUDIO IN CH-1	1-508-084-00 CONNECTOR, 3P, MALE
AUDIO IN CH-2	
DC IN	1-508-362-00 PLUG, XLR, 4P, FEMALE
CAMERA	1-566-579-11 CONNECTOR, 50P, MALE

2-9. CONNECTOR INPUT/OUTPUT SIGNAL

INPUT

CAMERA VIDEO IN : Y/C separate signal from 50P connector
Y: 1.0 Vp-p ± 1.0 dB, 1k ohm, unbalanced, sync negative
C: 0.30 Vp-p ± 1.0 dB, 1k ohm, unbalanced

AUDIO IN
CH-1/L, CH-2/R (0 dBu = 0.775 Vrms) Mic: -60 dBu, more than 3k ohm, balanced
Line: +4 dBu, more than 10k ohm, balanced

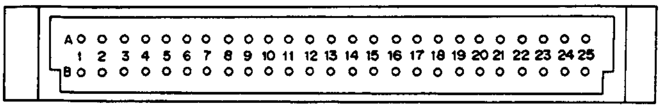
OUTPUT

VIDEO OUT : Composite signal
. 1.0 Vp-p ± 1.0 dB, 75 ohm, unbalanced, sync negative

AUDIO OUT : -10 dBu (at 47k ohm load), unbalanced

EARPHONE : Max -18 dBu (at 8 ohm load), level adjustable

50P CONNECTOR (CAMERA IN)



(EXT VIEW)

Pin No.	Signal	Pin No.	Signal
A1	GND(CHASSIS)	A14	CHROMINANCE IN(G)
B1	GND(CHASSIS)	B14	CHROMINANCE IN(X)
A2	MIC IN(Y)	A15	LIMINANCE IN(G)
B2	MIC IN(X)	B15	LIMINANCE IN(X)
A3	MIC IN(G)	A16	NC
B3	EARPHONE OUT(G)	B16	NC
A4	REC TALLY OUT	A17	NC
B4	EARPHONE OUT(X)	B17	NC
A5	CAMERA TRIGGER IN	A18	BATT ALARM OUT
B5	REC OFF OUT	B18	REC VIEW CONT IN
A6	NC	A19	NC
B6	NC	B19	NC
A7	NC	A20	NC
B7	NC	B20	NC
A8	NC	A21	NC
B8	NC	B21	GND
A9	NC	A22	UNREG(+12V)OUT
B9	NC	B22	UNREG(+12V)OUT
A10	PB VIDEO OUT(G)	A23	UNREG(GND)OUT
B10	PB VIDEO OUT(X)	B23	UNREG(GND)OUT
A11	NC	A24	NC
B11	PLAYBACK/CAMERA CONT PB ID OUT	B24	NC
		A25	GND (CHASSIS)
A12	VBS(COQ)IN(G)	B25	GND(CHASSIS)
B12	VBS(COQ)IN(X)		
A13	VTR SAVE IN		
B13	NC		

2-10. SPARE PARTS

(1) The ⚠ -marked components are critical to safety. Replace only with same components as specified.

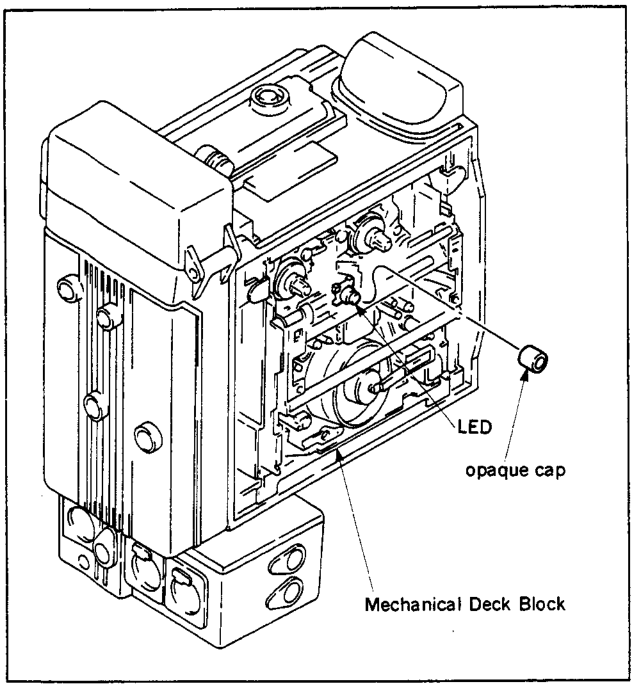
(2) Replacement parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to **accommodating the improved parts and/or engineering changes or standardization of genuine parts.** This manual's exploded views and electrical spare parts list indicate the part numbers of **the standardized gunuine parts at the present.** Regarding engineering part changes in our engineering department, refer to Sony service bulletins and service manual supplements.

(3) The parts marked with **s** in the SP column of the exploded views and electrical spare parts list are normally stocked for replacement purposes. The parts marked with **o** in the SP column are not normally required for routine service work. Orders for parts marked with **o** will be processed, but allow for additional delivery time.

2-11. HOW TO OPERATE THE UNIT WITHOUT CASSETTE TAPE (MUTING OF THE TAPE BEGINNING/END SENSORS)

When replacing mechanical parts, sometimes there is a case need to select modes without cassette tape inserting. Stop the Tape Beginning/End Sensors as follows and then operate the unit. If using the Mode Selector, it is not necessary to stop the Tape Beginning/End Sensors.

Put an opaque cap on the LED Assembly as shown in the figure.



2-12. CASSETTE TAPE REMOVAL PROCEDURE WHEN NORMAL EJECTION IS NOT POSSIBLE

. When the cassette tape cannot be ejected from the unit because the tape is wound around the Drum.

(1) Remove the Cassette Lid and Side Panel (L) Assembly referring to Section 2-2.

(2) Open the Side Panel (R) Assembly referring to Section 2-2.

(3) Remove the SS-43P Board referring to Section 2-5.

(4) Turn the worm gear of the threading motor in the direction of the arrow with a thin rod etc.. (Fig. A) Move that the No. 5 and No. 6 Guides of the Coaster (Right) Assembly in order to be placed as shown in fig. B. Check that the No. 5 and No. 6 Guides are not under the HC Roller Assembly.

(5) Remove the tape from the No. 1 thru No. 7 Guides and Pinch Roller Assembly.

Note 1: When removing the tape from the guides, be careful not to damage it.

Note 2: The mechanical chassis's sliding portion of the Coaster (Right) and (Left) Assemblies are smeared grease. Do not be adhered grease to the tape.

(6) Turn the rotor of the Capstan Motor in the direction of arrow A or B by hand and wind up the tape into the cassette. (Fig. C)

The direction of arrow A: wind up the tape to S side

The direction fo arrow B: wind up the tape to T side

(7) Push the arrow of lock lever by hand as shown in fig. D and eject the cassette tape.

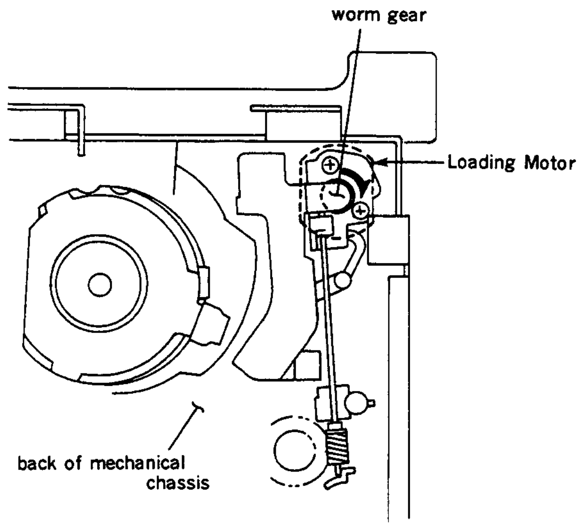

worm gear
Loading Motor
back of mechanical chassis

Fig. A

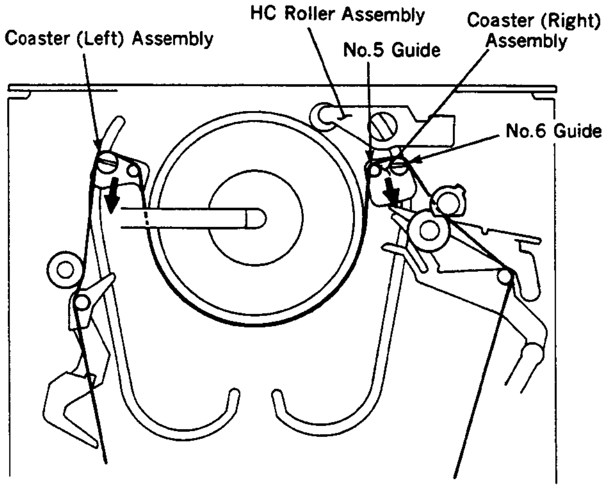

HC Roller Assembly
Coaster (Left) Assembly
No.5 Guide
Coaster (Right) Assembly
No.6 Guide

Fig. B

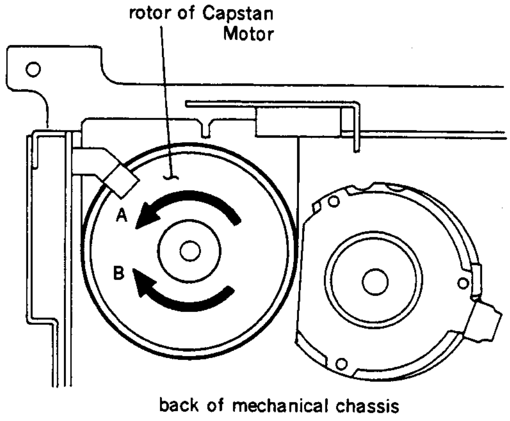

rotor of Capstan Motor
A
B
back of mechanical chassis

Fig. C

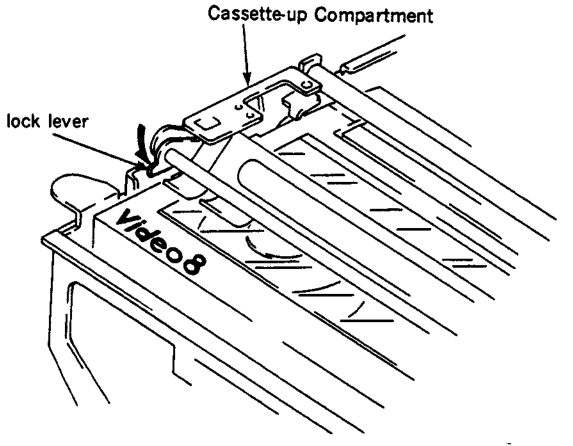
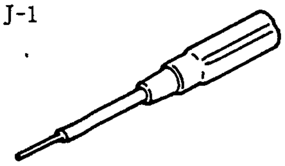

Cassette-up Compartment
lock lever
Video8

Fig. D

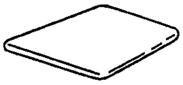
2-13. FIXTURE

Ref. No.	Parts No.	Description	Application
J-1	7-700-766-01	Hexagonal Screwdriver (0.89mm)	Tape Path Adjustment
J-2	7-741-900-53	Wiping Cloth	Cleaning
J-3	8-967-992-17	Alignment Tape, WR2-3CS	Switching Position Adjustment
J-4	8-967-995-07	Alignment Tape, WR5-1CP	Tape Path Adjustment
J-5	8-967-995-18	Alignment Tape, WR5-7CE	Video Frequency Response Adjustment
J-6	8-967-995-47	Alignment Tape, WR5-5CSP	Video Adjustment
J-7	8-967-995-48	Alignment Tape, WR5-8CSE	Audio and Video Adjustment (SP)
J-8	J-6080-824-A	FWD, REV Winding Torque Cassette	S and T Reel Tables Winding Torque Check
J-9	J-6080-825-A	Mode Selector	Check, Adjustment and Replacement of Mechanical
J-10	J-6080-840-A	Small Adjustment Mirror	Tape Path Adjustment
J-11	J-6082-021-A	Mode Selector III Conversion Connector	Check, Adjustment and Replacement of Mechanical
J-12	J-6082-023-A	Mode Selector III Panel	Check, Adjustment and Replacement of Mechanical
J-13	Y-2031-001-1	Cleaning Fluid	Cleaning
J-14	——	Rotary Drum Tool (supplied accessory of Repair Rotary Upper Drum)	Replacement of Rotary Upper Drum
J-15	Comercially Sold	Head Degausser	Head Degauss

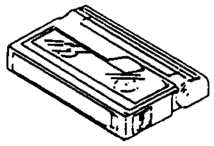
J-1



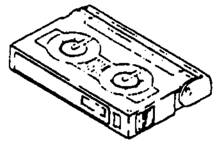
J-2



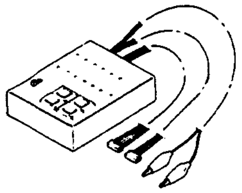
J-3, J-4, J-5, J-6, J-7



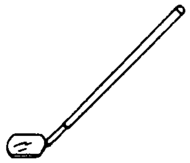
J-8



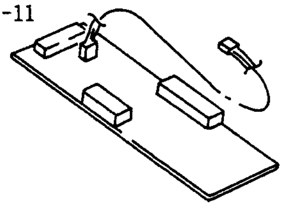
J-9



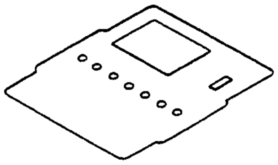
J-10



J-11

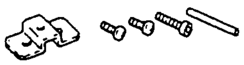


J-12



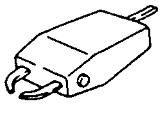
J-13

J-14



(Supplied accessory of Repair Rotary Upper Drum)

J-15

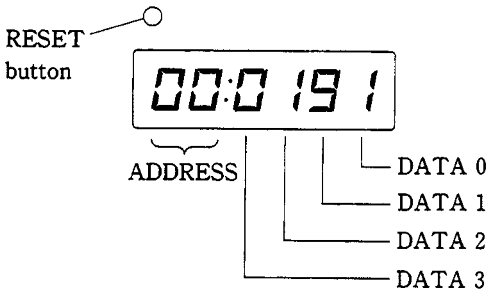


2-14. SELF DIAGNOSTIC FUNCTION

This model equips a Self Diagnostic Mode for function check. The Self Diagnostic Mode has 31 kinds of Address Codes. Perform the function check referring to the Address Codes and make the most of them for maintenance, check and repair.

2-14-1. Operation

The adress and deta are displayed on LCD DISPLAY at Side Panel (Left).



DATA 0-3: Refer to Table 1.

SELF DIAG switch: setting of Self Diagnostic
RESET button: select of adress code

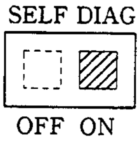
[Operation procedure]

1. Turn the SELF DIAG switch to ON.
2. Press the RESET button and select the address code.
   - Every time the RESET button is pressed, the address is added to one.

     → 00 → 01 --- → 0A --- → 1d → (1E) ┐

   - How to return to initial address from others

     Press continuously the RESET button or turn the SELF DIAG switch to ON after turning it to OFF.
3. After completing the check, be sure to turn the SELF DIAG switch to OFF.



Note: ADDRESS [1E]

The address [1E] is an aging mode. Never use it usually.

If setting the address [1E], the unit put into the aging mode having priority over operation functions.

Reference: How to putting into the aging mode

Press the RESET button more than 2 seconds into the address [1d].

Aging mode

→ REC → TAPE END → REW → TAPE TOP ┐

REPEAT

2-14-2. Contents fo Address and Data

. When the unit functions proparly, each data is displayed as described in the table. If some trouble happens, the data chenges from 1 to 0 or 0 to 1. Check the checking points described in the table. If there is not checking point in the table, perform check as situation because it caused by some defects.

※ : Perform the check with a camera (DXC-325P).
( ): checking point for trouble

Table 1.

ADDRESS	DATA 3	DATA 2	DATA 1	DATA 0
00	FINAL MODE (Refer to Table 2.)		CURRENT MODE (Refer to Table 2.)	
01	—		SLACK MODE (Refer to Table 2.)	
02	LAST EMERGENCY (Refer to Table 3.)			
03	PRESENT EMERGENCY (Refer to Table 3.)			
04	MODE SWITCH CODE (Refer to Table 4.)			
05	—	1 POWER DOWN IN (IC1-47, 53/SY-153P)	1 DEW IN (IC1-48/SY-153P)	1 POWER DOWN IN (IC1-47, 53/SY-153P)
06	0 SYSTEM RESET OUT (IC1-38/SY-153P)	0 FF LAMP OUT (IC1-35/SY-153P)	0 PLAY LAMP OUT (IC1-36/SY-153P)	0 REW LAMP OUT (IC1-37/SY-153P)
07	—	—	—	1 POWER ON OUT (IC1-16/SY-153P)
08	—	—	0 ※ REC REVIEW IN (IC1-11/SY-153P)	0 ※ CAMERA TRIGGER IN (IC1-12/SY-153P)
09	1 REC OFF OUT (IC1-5/SY-153P)	0 ※ BATTERY ALARM OUT (IC1-6/SY-153P)	1 ※ PB ID OUT (IC1-7/SY-153P)	0 ※ REC TALLY OUT (IC1-8/SY-153P)
0A	1 ※ Y DETECT IN (IC1-61/SY-153P)	0 POWER SWITCH OFF IN (IC1-62/SY-153P)	0 ※ BATTERY END IN (IC1-63/SY-153P)	0 BATTERY BEFORE END IN (IC1-64/SY-153P)
0b	—	0 TEST 3 IN (IC1-75/SY-153P)	0 TEST 2 IN (IC1-76/SY-153P)	0 TEST 1 IN (IC1-77/SY-153P)
0C	—	—	1 AUDIO MUTE (IC405-12/VO-32P)	1 VIDEO MUTE (IC405-11/VO-32P)
0d	1 Hi8-MODE (IC405-4/VO-32P)	1 ME TAPE (IC405-5/VO-32P)	—	—
0E	1 STOP EMERGENCY 2	1 TAPE END (Tape End Sensor)	1 BATTERY END	1 STOP EMERGENCY 1
0F	1 ※1CH CLOG	1 ※2CH CLOG	1 TAPE IN	1 TAPE LOADING (1) UNLOADING (1)

ADDRESS	DATA 3	DATA 2	DATA 1	DATA 0
10	—	1 ※ TAPE BEFORE END (Reel FG)	—	—
11	1 PB LP (IC001-59/SS-43P)	1 PB Hi8 (IC001-41/SS-43P)	1 TAPE END (SW) (IC001-45/SS-43P)	1 TAPE TOP (SW) (IC001-46/SS-43P)
12	—	1 SHUTTLE	1 ※ CLOG	1 VA PB (IC001-14/SS-43P)
13	1 Hi8 MP TAPE (RECOG switch)	—	1 ME TAPE (RECOG switch)	1 MISS REC (cassette tape)
14	—	1 MECHA SW 2 (mode switch)	1 MECHA SW 1 (mode switch)	1 MECHA SW 0 (mode switch)
15	1 CASSE-CON UP (cassette - up compartment switch)	1 ※ CAPSTAN LOCK	1 ※ DRUM LOCK	—
16	—	—	1 ※ REC Hi8	—
17	—	1 TAPE UNLOAD	1 DEW STATUS	0 ※ REC SP
18	—	—	—	—
19	1 HOURS METER (IC502-79/FP-37)	—	TEST MODE (Refer to Table 5.)	
1A	—	—	—	—
1b	—	—	1 PB KEY	1 STOP KEY
1C	1 EJECT KEY	—	REW KEY	FF KEY
1d	—	—	—	—
1E	AGING MODE (Never use this address usually)			

. When tape slack has happened, check as follows.

1. ADDRESS 01 : It is possible to see the mode that has happened tape slack.

⇩

2. ADDEESS 02 : It is possible to see the cause of tape slack.

⇩

3. ADDEESS 03 : During use the unit, if the tape slack has happened because of some causes, the causes are displayed in order by pressing the RESET button.

<FINAL MODE, CURRENT MODE, AND SLACK MODE>

- It shows operation system and tape path system modes. If trouble happens, [B2] or [C2] is displayed. Perform check as trouble situation.

Table 2.

MEANING DISPLAY	DISPLAY	MEANING DISPLAY	DISPLAY
EJECT	01	EMERGENCY2 STOP	C2
EJECTED DEW	11	FF	03
UNLOAD STOP	31	REW	83
TAPE UNLOADING	91	REC	04
NORMAL STOP	02	REC PAUSE	14
TAPE LOADING	12	REC REVIEW FORWARD	85
BATTERY DOWN STOP	32	REC REVIEW REVERSE	95
DEW STOP	42	PB	06
TAPE END STOP	62	FORWARD SEARCH	46
TAPE TOP STOP	72	REVERSE SEARCH	56
EMERGENCY1 STOP	B2		

<PRESENT/LAST EMERGENCY>

PRESENT EMERGENCY : trouble that is happening now
LAST EMERGENCY : trouble that happened last time

Table 3.

TROUBLE	PRESENT EMG DISPLAY	LAST EMG DISPLAY
Normal operation	00 00	00 00
Loading Motor	00 01	00 01
REEL FG trouble when unthreading	00 02	00 02
REEL FG trouble except when unthreading	00 03	00 03
Capstan trouble	00 04	00 04
DRUM PG trouble when the Drum rises up (0)	00 05	00 05
DRUM PG trouble when the Drum rises up (1)	01 05	01 05
DRUM PG trouble when the Drum rises up (2)	02 05	02 05
No Drum PG when the Drum rises up (0)	00 06	00 06
No Drum PG when the Drum rises up (1)	01 06	01 06
No Drum PG when the Drum rises up (2)	02 06	02 06
DRUM FG trouble when the Drum rotating (0)	00 07	00 07
DRUM FG trouble when the Drum rotating (1)	01 07	01 07
DRUM FG trouble when the Drum rotating (2)	02 07	02 07
No DRUM PG when the Drum rotating (0)	00 08	00 08
No DRUM PG when the Drum rotating (1)	01 08	01 08
No DRUM PG when the Drum rotating (2)	02 08	02 08
Phase trouble when the Drum rotating (0)	00 09	00 09

(1) Tape Threading mode
(2) Tape Unthreading mode
(0) Others

<MODE SWITCH CODE (mechanical mode)>

- When the mechanical movement is stopped, the mode is displayed. When some trouble happens, check the loading motor, capstan motor, mechanical drive system and operation button system.

Table 4.

Mechanical mode	Display
EJECT	00 00
I.A (Mode is changing.)	00 01
UNLOAD	00 02
I.B (Mode is changing.)	00 03
STOP (Threading is completed.)	00 04
I.C (Mode is changing.)	00 05
RP (REC, PB, FF, REW, REVIEW, PAUSE)	00 06
Trouble of mode switch	00 AA

<TEST MODE>

- There are three test modes. When following adjustment are performed, it is displayed that the unit is put into the TEST MODE. When the trouble happens during adjustment of TEST MODE 1 to 3, check the address [0b]. Refer to alignments about detail.

Table 5.

Contents	Display
NO TEST : nomal mode	00
TEST MODE1 : Section 8-2. Switching Position Adjustment	01
TEST MODE2 : Section 7-2-1. Battery End Adjustment	10
TEST MODE3 : Section 6. Tape Path Adjustment	11

SECTION 3
PERIODIC CHECK AND MAINTENANCE

The following periodic check and maintenance shedule are recommended to be performed in order to obtain maintain performance and longer life of the unit. The period of the check and maintenance refers to Hours Meter inside of Side Panel (R) Cover.

3-1. MAINTENANCE AFTER REPAIRS

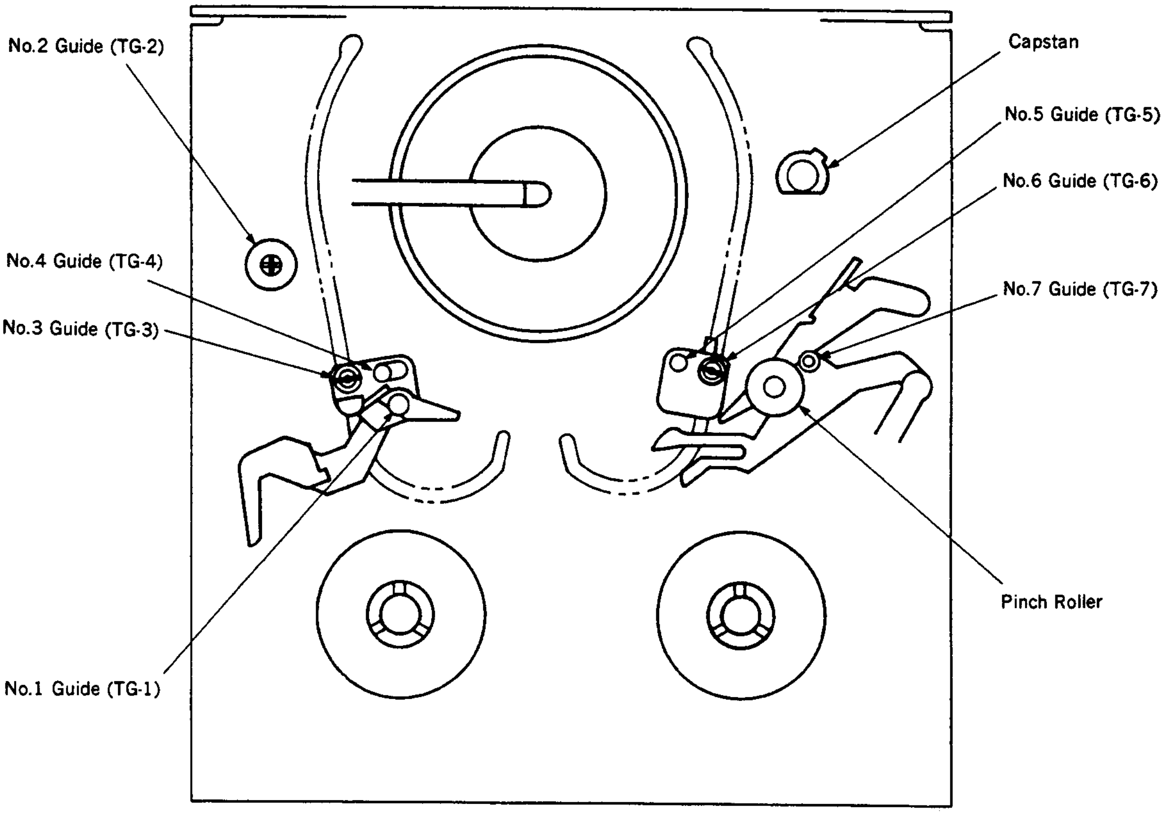
Perform the following maintenance after repairs without regarding operational hours of the unit.

(1) Cleaning of Rotary Upper Drum
Press cleaning piece moistend with cleaning fluid lightly against Rotary Upper Drum and turn slowly Rotary Upper Drum counterclockwise by a hand.

Note: Never turn it with electric power. Never turn it clockwise by a hand. When cleaning head chip, never move the cleaning piece in vertical direction. It is possible to damage the head chip.

(2) Cleaning of Tape Path System
Put Cassette-up Compartment Assembly into the EJECT mode. Clean tape path system as No. 1 thru. No. 11 Guides, Drum, Capstan Shaft, and Pinch Roller with the cleaning piece moistend with cleaning fluid.

(3) Cleaning of Drive System
Clean drive system as Reel Table surface and belt with the cleaning piece moistend with cleaning fluid.



3-2. PERIODIC CHECK

Perform periodic check and maintenance according to operational hours of the unit.

3-3. HOURS METER

Hours Meter can be displayed the total rotation time of the Upper Drum Assembly. When the Hours Meter reaches 1,000 hours, it is recommended to replace the Upper Drum Assembly with a new one.

○ : Cleaning ◆ : Replacement ◇ : Check ■ : Apply oil □ : Smear grease

Location			Hours of Use (H) : Hour of Drum Rotation										Reference Section
	Part Name	Part No.	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Tape Path	Tape Path surface	—	○	○	○	○	○	○	○	○	○	○	3-1.
	Upper Drum Assembly (DGR-50-R)	A-7049-267-A	○	◆	○	◆	○		○	◆	○	◆	4-22.
	Drum Assembly (DGU-50A-R)	A-7048-297-A	○	○	○	○	○	◆	○	○	○	○	4-22.
	Pinch Roller Assembly	A-7040-219-A	○	○	○	○	○	◆	○	○	○	○	4-8.
	(*1) Coaster (Left) Assembly	A-7040-204-A				□				□			3-4. 4-20.
	(*1) Coaster (Right) Assembly	A-7040-220-A				□				□			3-4. 4-19.
	(*2) Capstan Motor	8-835-331-01		■		■		◆		■		■	3-5. 4-3.
Drive System	Loading Motor	A-7040-160-A						◆					4-21.
	(*2) Joint Gear Assembly	X-3726-805-1				■				■			3-5. 4-16.
	TS Brake Assembly	X-3726-808-2				◆				◆			4-17.
	Tension Regulator Band Assembly	X-3726-809-2				◆				◆			4-12.
	(*2) Relay Pulley Assembly	X-3726-838-1				■				■			3-5. 4-17.
	(*1) (*2) Drive Gear (Left) Assembly	X-3728-842-1				□/■				□/■			3-4. 3-5. 4-20.
	(*1) (*2) Drive Gear (Right) Assembly	X-3728-843-1				□/■				□/■			3-4. 3-5. 4-19.
	S Reel Table Assembly	X-3728-851-1	○	○	○	○	○	◆	○	○	○	○	4-10.
	T Reel Table Assembly	X-3728-855-1	○	○	○	○	○	◆	○	○	○	○	4-11.
	(*2) RC Gear Assembly	X-3728-858-1				■				■			3-5. 4-16.
	(*1) Worm Assembly	X-3728-868-1				□				□			3-4. 4-21.
	Timing Belt (S)	3-728-866-11				◆				◆			4-16.
	Timing Belt (L)	3-741-197-01				◆				◆			4-16.
	(*1) Groove of Coaster Guide	—				□				□			3-5.
Performance Check	Abnormal-noise	—	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	
	FWD Back Tension Measurement	—		◇		◇		◇		◇		◇	5-1.
	FWD, RVS Torque Measurement	—		◇		◇		◇		◇		◇	5-2.

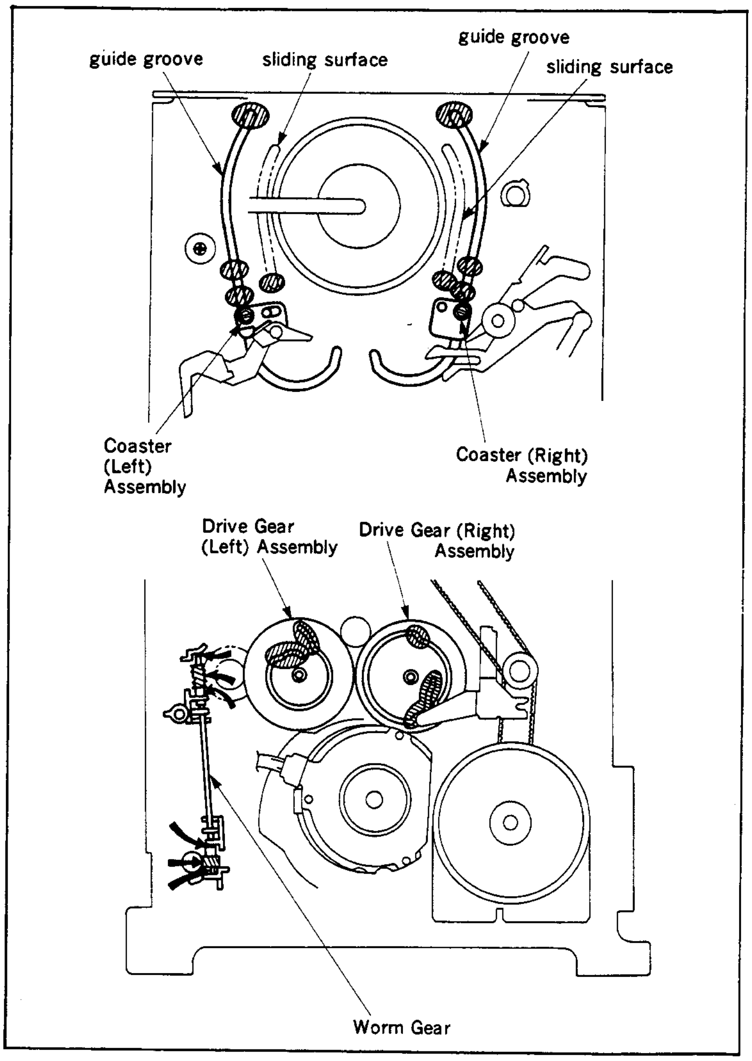
(*1) Smear a grease referring to Section 3-4.
(*2) Apply oil referring to Section 3-5.
(*3) When overhauling, replace part referring to the list.
(*4) Replacement of part will be influenced by operating surrowndings.
(*5) When repairing, be sure to clean Tape Path surface.

3-4. SMEAR GREASE

Smear a grease periodically to the following portions.

- Top projection of Coaster (Left) Assembly
- Top projection of Coaster (Right) Assembly
- Coaster Guide's groove of mechanical chassis
- Sliding surface of the Coaster Guide on the mechanical chassis
- Lever Drive's groove of Drive Gear (Left) Assembly
- Lever Drive's groove of Drive Gear (Right) Assembly
- Worm Gear of Worm Assembly

Then smear a grease to the shaded portions and arrow portions.

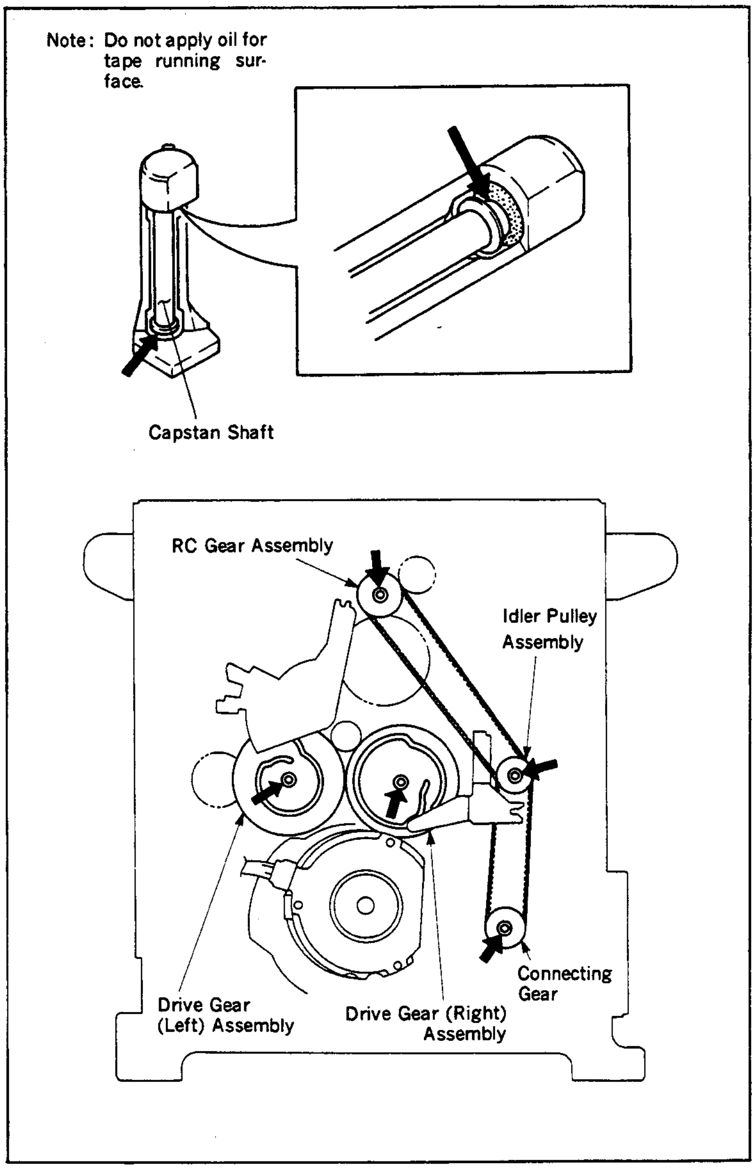

guide groove
sliding surface
guide groove
sliding surface
Coaster (Left) Assembly
Coaster (Right) Assembly
Drive Gear (Left) Assembly
Drive Gear (Right) Assembly
Worm Gear

3-5. APPLY OIL

Apply oil periodically to the following portions.

- Capstan Shaft
- Shaft of Drive Gear (Left) Asembly
- Shaft of Drive Gear (Right) Assembly
- Shaft of Idler Pulley Assembly
- Shaft of RC Gear Assembly
- Shaft of Connecting Gear Assembly

Then apply a half drop of oil to the arrow portions.



Note: Do not apply oil for tape running surface.

Capstan Shaft
RC Gear Assembly
Idler Pulley Assembly
Connecting Gear
Drive Gear (Left) Assembly
Drive Gear (Right) Assembly

3-6. HOW TO USE CLEANING TAPE

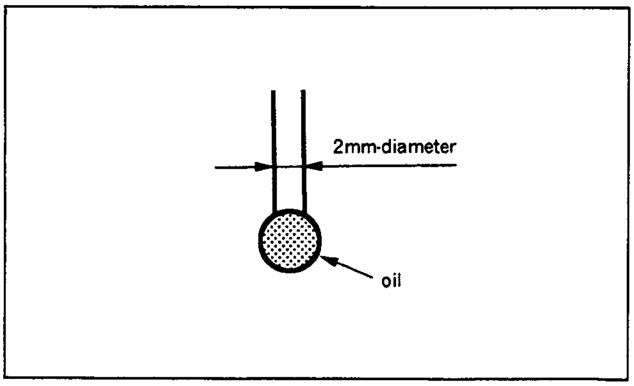
Cleaning tape: V8-6CLHSP
(supplied accessory)
V8-25CLH (option)

Note: Do not use cleaning tape, V8-25CLN.

(1) When Rotary Head clogs and the head clogging cannot remove with head cleaning, use the cleaning tape. If using in other conditions, it will be shorten the life of the head.
(2) The one time cleaning is within fifteen seconds and use the cleaning tape only one time after rewinding.

3-7. OTHERS

(1) Sony oil
. Be sure to use Sony oil. If other oil is used, it is possible to trouble because of different viscosity.
Sony oil: Part No. 7-661-018-18
. Use Sony oil in which dust and others are not mixed. If mixed, it is possible to seizure or wear of bearing.
. A drop of oil means the amount which sticks to a 2mm-diameter rod as shown in the figure.



(2) Sony grease
. Be sure to use Sony grease.
Sony grease: Part No. 7-662-010-08
(SGL-701)

SECTION 4
REPLACEMENT OF MAJOR PART

PREPARATION FOR REPLACEMENT OF PART

Replacement of some parts use a Mode Selector (Tool). ☐ marked modes in the replacement procedure are set by pressing button on the Mode Selector. Install a Mode Selector III Panel on the Mode Selector and then use it.

Mode Selector: J-6080-825-A
Mode Selector III Panel: J-6082-023-A

Operation of Mode Selector

1. Location of part and control (Fig. 1)
2. Connection (Fig. 2)

(1) Install the Mode Selector III Panel on the Mode Selector.

(2) Connect the Mode Selector III Conversion Connector to the 6P connector (white) of the Mode Selector M-switch.

(3) Remove the Mechanical Deck Block referring to Section 2-3.

(4) Disconnect the connector CN003 of Loading Motor from the SS-43P Board and CN001 (FP-89 Board) from the CC-44 Board.

(5) Install the FP-89 Board to the Mode Selector III Conversion Connector. Connect the 2P connector of Loading Motor (red CN003/SS-43P) to the 2P connector (white).

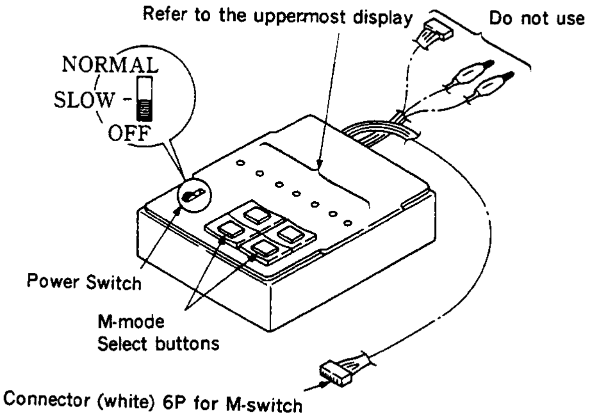

Refer to the uppermost display
Do not use
NORMAL
SLOW
OFF
Power Switch
M-mode
Select buttons
Connector (white) 6P for M-switch

Fig. 1

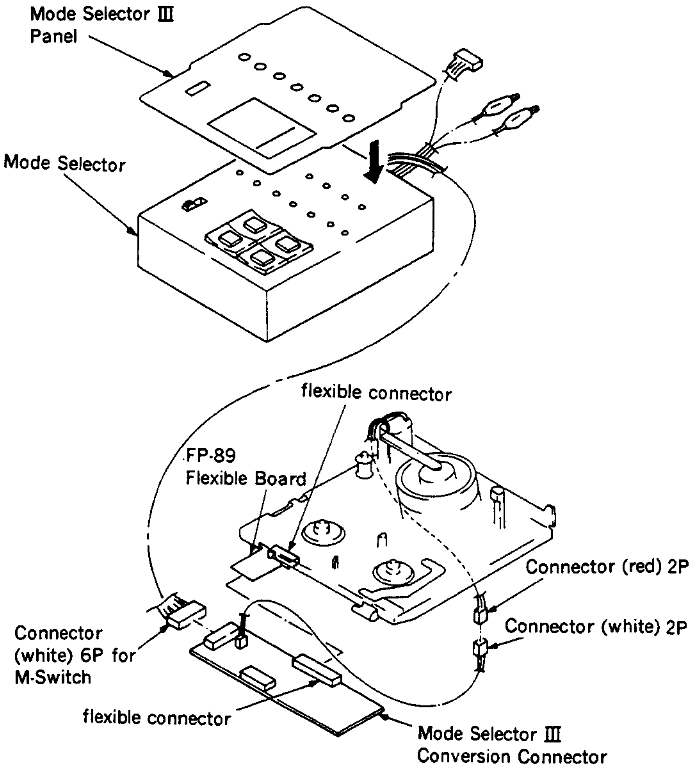

Mode Selector III
Panel
Mode Selector
flexible connector
FP-89
Flexible Board
Connector (red) 2P
Connector (white) 2P
Connector
(white) 6P for
M-Switch
flexible connector
Mode Selector III
Conversion Connector

Fig. 2

3. Operation (Fig. 3)

- Use only M-mode select buttons.
- Refer to the uppermost display on the Mode Selector III Panel about display of the mode. The displays of IA, IB and IC light up during the mode changes.
- Press continuously the right side M-mode select button and the mode changes the EJECT, (IA), ULD, (IB), STOP, (IC) and FWD in order.
- Press the left side M-mode select button, mode changes from FWD to EJECT in order.

Mode Selector III Panel

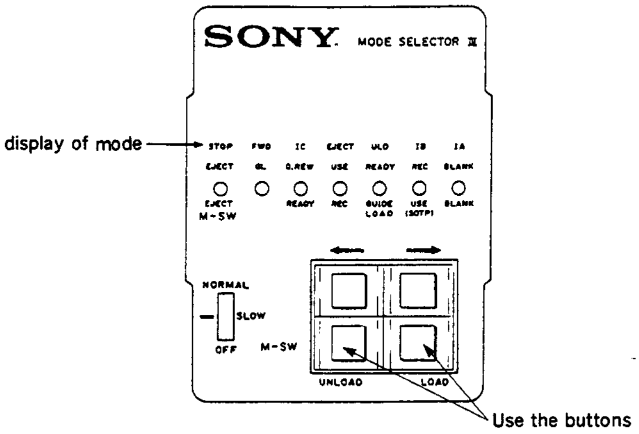

SONY. MODE SELECTOR III
display of mode
STOP FWD IC EJECT ULD IB IA
EJECT GL Q.REW USE READY REC BLANK
EJECT READY REC GUIDE LOAD USE (SOTP) BLANK
M-SW
NORMAL
SLOW
OFF
M-SW
UNLOAD
LOAD
Use the buttons

Fig. 3

4-1. REPLACEMENT OF HC ROLLER ASSEMBLY

Removal:

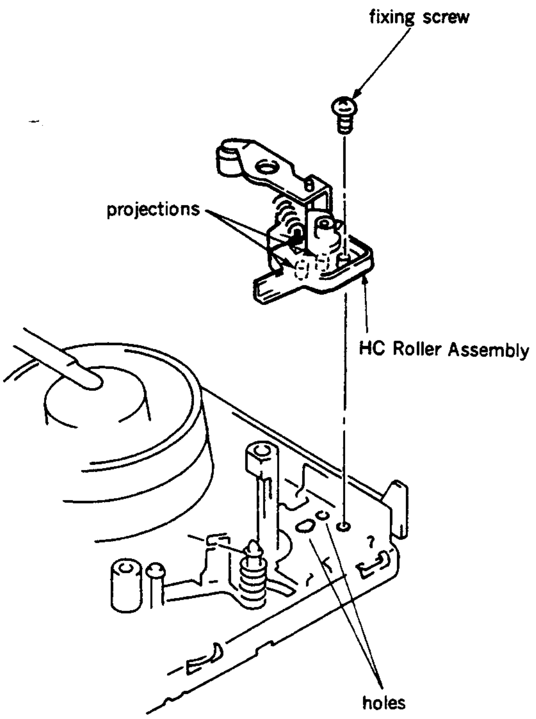
(1) Remove the Cassette Lid and Side Panel (Left) Assembly referring to Section 2-2.

(2) Remove a fixing screw and remove HC Roller Assembly.

Installation:

(1) Put the two projections of the HC Roller Assembly into the two holes of the mechanical chassis.

(2) Install the HC Roller Guide with the fixing screw.


fixing screw
projections
HC Roller Assembly
holes

4-2. REPLACEMENT OF GUIDE GUARD ASSEMBLY

Removal:

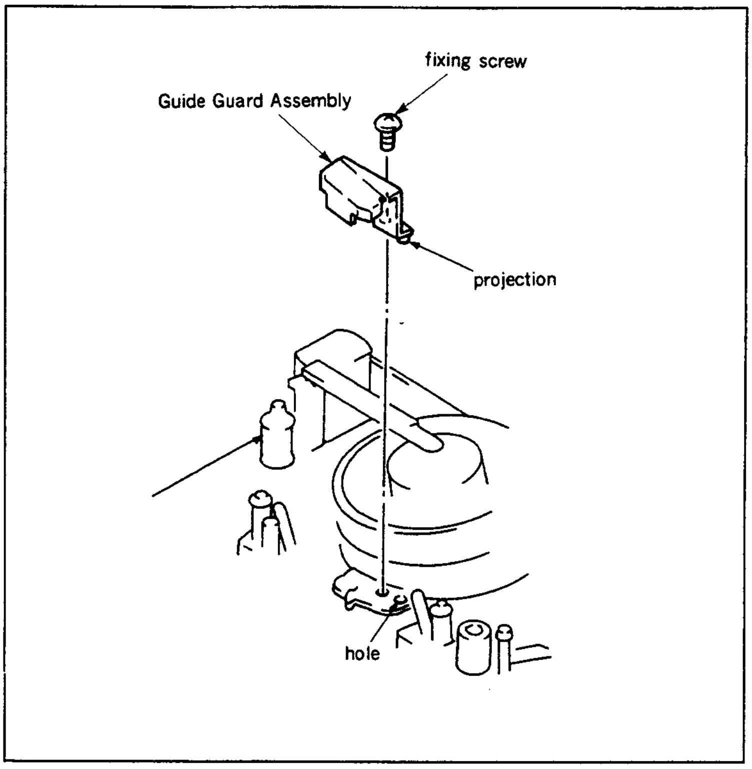
(1) Remove the Cassette Lid and Side Panel (Left) Assembly referring to Section 2-2.

(2) Remove a fixing screw and remove Guide Guard Assembly.

Installation:

(1) Put a projection of the Guide Guard Assembly into the hole.

(2) Install the Guide Guard Assembly with the fixing screw.


fixing screw
Guide Guard Assembly
projection
hole

4-3. REPLACEMENT OF DC MOTOR (CAPSTAN MOTOR)

Tool: Mode Selector

Removal:

- When replacement, be careful not to touch capstan motor shaft, oil seal and rotor.

(1) Remove the Mechanical Deck Block referring to Section 2-3.
(2) Remove SS-43P Board referring to Section 2-5.
(3) Set ULD mode.
(4) Remove the HC Roller Assembly referring to Section 4-1.
(5) Turn the stopper in the direction of arrow A as far as it will go.
(6) Remove two fixing screws. Move Capstan Motor in the direction of the arrow and remove it while paying attention not to touch the projection of the chassis. (Fig. A)

Installation:

(1) Move the Capstan Motor in the opposite direction of the arrow and install it in the hole of the chassis. (Fig. A)
(2) Put the two projections of the Capstan Motor to the holes of the fixing screw. Engage the gear portion of the Capstan Motor to Connecting Gear. Be careful not to damage the gear.
(3) Install the Capstan Motor with two fixing screws. Check that there is no clearance between the Capstan Motor and chassis.
(4) Turn the stopper in the direction of arrow B as far as it will go.

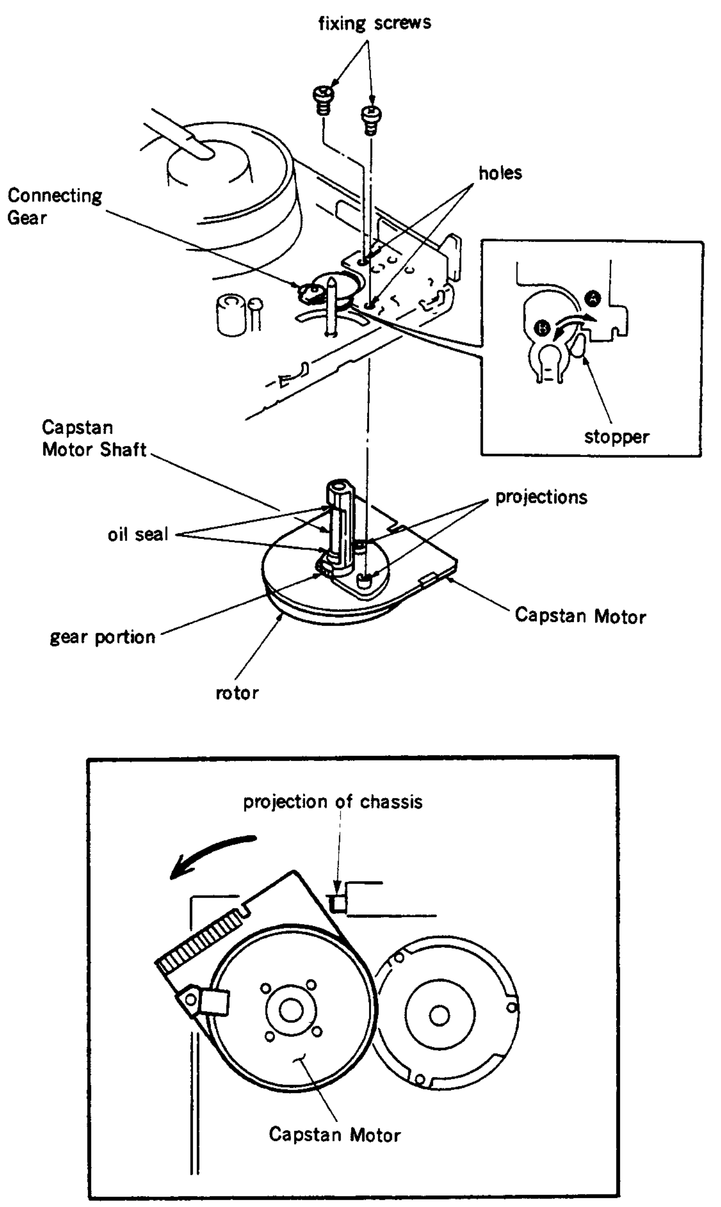

fixing screws
holes
Connecting Gear
A
B
stopper
Capstan Motor Shaft
projections
oil seal
Capstan Motor
gear portion
rotor
projection of chassis
Capstan Motor

Fig. A

4-4. REPLACEMENT OF S AND T BRAKES

Removal:

(1) Remove the Cassette Lid referring to Section 2-2.

(2) Remove tortion spring (ST).

(3) Remove Shaft Holding Pin A and remove T Brake.

(4) Remove Shaft Holding Pin B and remove S Brake.

Installation:

(1) While putting the gear portion to the notch, install the S Brake.

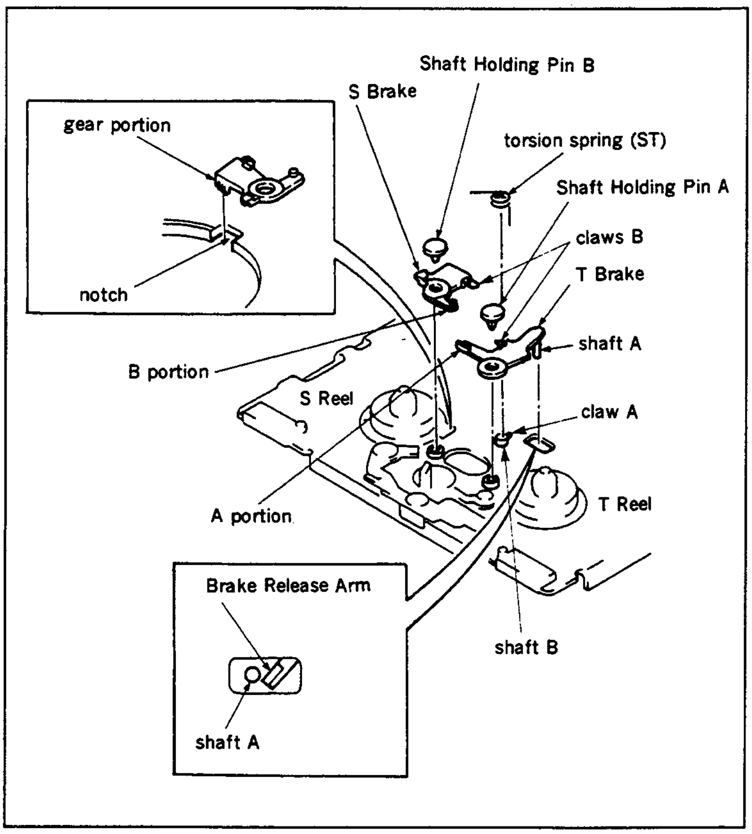
(2) Install the Shaft Holding Pin B.

(3) Put the shaft A of the T Brake to the left side of the Brake Release Arm as shown in the figure and install the T Brake.

(4) Install the Shaft Holding Pin A.

(5) Put the torsion spring (ST) under the claw A of the shaft B and hook each ends of spring to the claws B.

Note: Before assemble the S and T Brakes, check that the claws of the Shaft Holding Pins A and B are not broken.


Shaft Holding Pin B
S Brake
gear portion
torsion spring (ST)
Shaft Holding Pin A
claws B
T Brake
notch
shaft A
B portion
S Reel
claw A
A portion
T Reel
Brake Release Arm
shaft B
shaft A

4-5. REPLACEMENT OF LB BRAKE AND SHAFT HOLDING PIN

Removal:

(1) Remove the Cassette Lid referring to Section 2-2.

(2) Remove a fixing screw and remove TL Stopper Plate.

(3) Remove Shaft Holding Pin A and remove LB Brake.

(4) Remove Shaft Holding Pin B and remove LB Lever.

Installation:

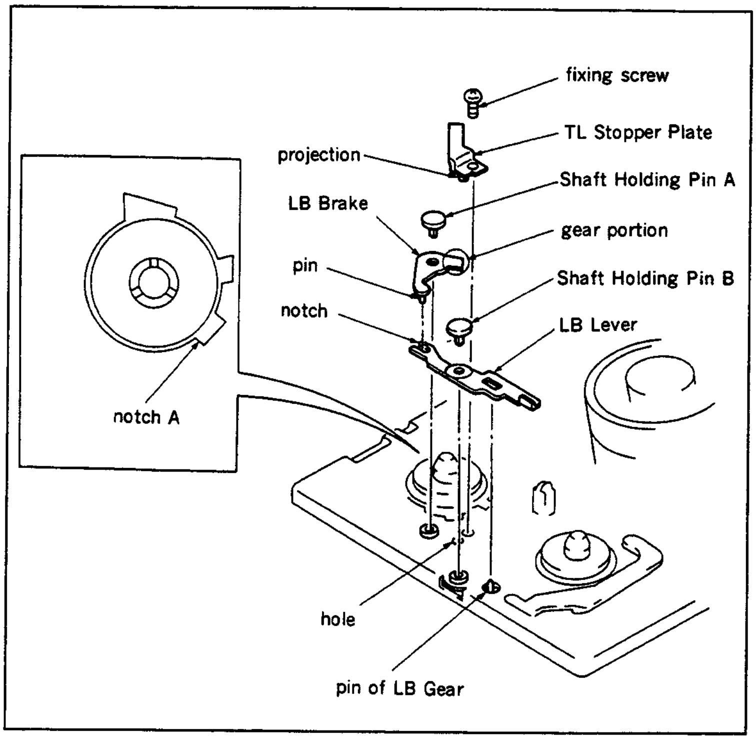
(1) Install the LB Lever so that the hole of the LB Lever fits to the pin of the LB Gear, and fasten with the Shaft Holding Pin B.

(2) Put the pin of the LB Brake into the notch of the LB Lever. While putting the gear portion of the LB Brake into the notch A as shown in the figure, install the LB Brake.

(3) Install the Shaft Holding Pin A.

(4) Put the projection of the TL Stopper Plate to the hole, and install with the fixing screw.

Note: Before assemble the LB Brake and Shaft Holding Pins, check that the claws of the Shaft Holding Pins A and B are not broken.


fixing screw
TL Stopper Plate
projection
Shaft Holding Pin A
LB Brake
gear portion
pin
Shaft Holding Pin B
notch
LB Lever
notch A
hole
pin of LB Gear

4-6. REPLACEMENT OF LB RELEASE ARM

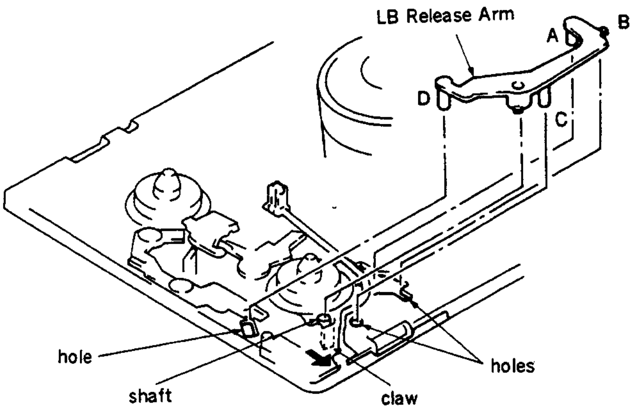
Removal:

(1) Remove the Cassette-up Compartment referring to Section 2-4.

(2) While pushing claw in the direction of the arrow from top of the unit with a thin flatblade screwdriver, remove LB Release Arm.

Installation:

(1) Put the LB Release Arm to the shaft. Put the A, B, C and D points into the three holes and lock the LB Release Arm with the claw.


LB Release Arm
A
B
D
C
hole
shaft
claw
holes

4-7. REPLACEMENT OF RK STOPPER AND STOPPER ARM

Removal:

(1) Remove the Cassette Lid referring to Section 2-2.

(2) Remove the Guide Guard Assembly referring to Section 4-2.

(3) Remove torsion spring (RK).

(4) Release claw of the chassis in the direction of the arrow and remove RK Stopper Arm.

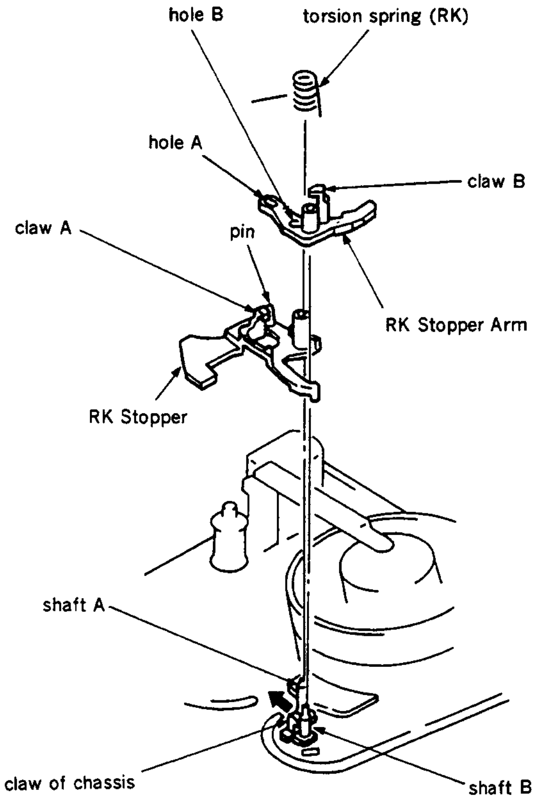
(5) Remove RK Stopper.

Installation:

(1) Install the RK Stopper to the shaft A.

(2) Install the RK Stopper Arm to the shaft B. Through the pin of the RK Stopper into the hole A of the RK Stopper Arm and lock the RK Stopper Arm with the claw of the chassis to the hole B.

(3) Put the torsion spring (RK) to the shaft of the RK Stopper and hook the ends of it to the claws A and B.


hole B
torsion spring (RK)
hole A
claw B
claw A
pin
RK Stopper Arm
RK Stopper
shaft A
claw of chassis
shaft B

4-8. REPLACEMENT OF PINCH ARM ASSEMBLY AND TG-7 ARM ASSEMBLY

Tool: Mode Selector
Sony Oil
Sony Grease

Removal:

(1) Remove the Cassette-up Compartment referring to Section 2-4.
(2) Move that TG-7 Arm Assembly in order to be placed as shown in fig. A with Mode Selector.
(3) Remove a stopper washer and remove Pinch Arm Assembly.
(4) Bend the claw in the hole A in the direction of the arrow with a thin flatblade screwdriver and remove TG-7 Plate Spring.
(5) Remove TG-7 Arm Assembly.

Installation:

(1) Smear a grease to inside edge and bottom of the hole B.
(2) Put the pin of the longitudinal hole on the chassis to the groove of the TG-7 Arm Assembly and put the shaft into the hole B.
(3) Smear a grease to the shaded portion A of the TG-7 Arm Assembly. Be careful not to smear a grease to the fixing screw of the TG-7 Arm Assembly. (Fig. B)
(4) Put the TG-7 Plate Spring into the hole A. Lock the claw and install it.
(5) Apply a half drop of oil to the shaft A. (Fig. C)
(6) Put the Pinch Arm Assembly in the shaft A and put the C porsion of the Pinch Sub Arm Assembly into the B porsion. When putting the Pinch Arm Assembly into the shaft A, be careful not to touch the TG-7 Guide and rubber portion.
(7) Fasten the stopper washer.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.

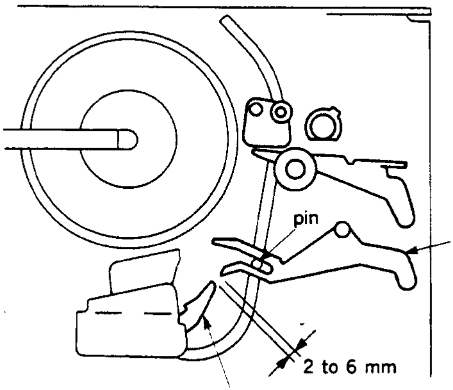
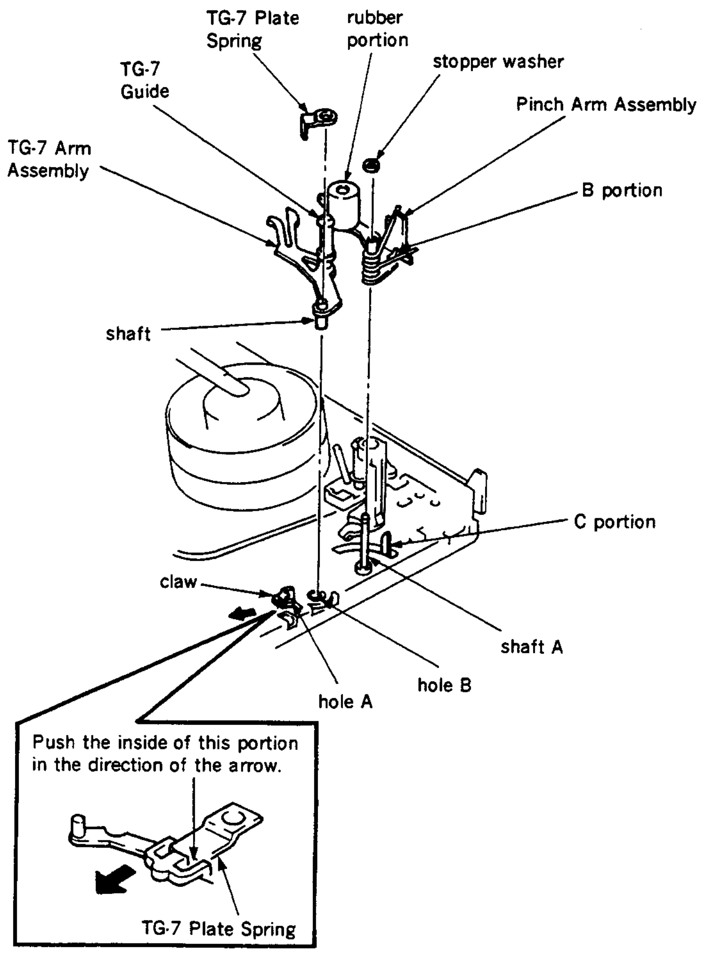

pin
TG-7 Arm Assembly
2 to 6 mm
RK Stopper

Fig. A


TG-7 Plate Spring
rubber portion
stopper washer
TG-7 Guide
Pinch Arm Assembly
TG-7 Arm Assembly
B portion
shaft
C portion
claw
shaft A
hole B
hole A
TG-7 Plate Spring

Push the inside of this portion in the direction of the arrow.

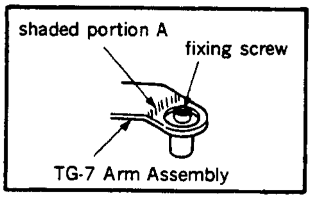
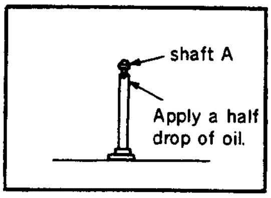

shaded portion A
fixing screw
TG-7 Arm Assembly

Fig. B



Apply a half drop of oil.

Fig. C

4-9. REPLACEMENT OF TG-2 ASSEMBLY

Removal:

(1) Remove the Cassette Lid and Side Panel (Left) Assembly referring to Section 2-2.

(2) Turn the arrow portion counterclockwise and remove TG-2 Upper Flange.

(3) Remove TG-2 Roller, TG-2 Sleeve and TG-2 Lower Flange and a compression spring.

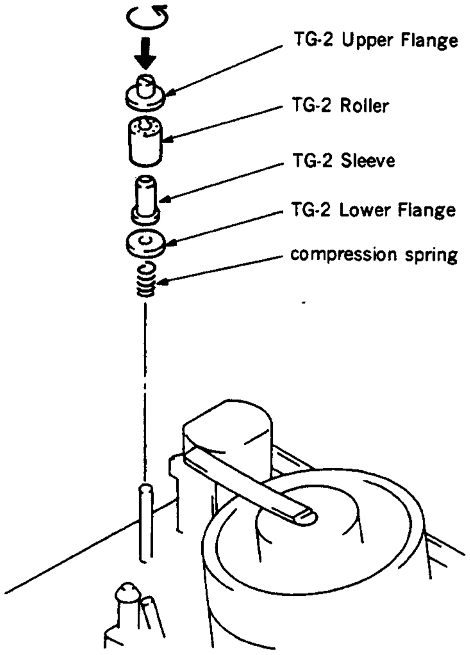
Installation:

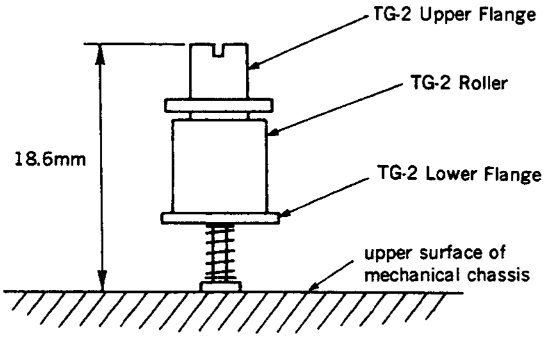
(1) Install the compression spring, TG-2 Lower Flange, TG-2 Sleeve and TG-2 Roller to the shaft.

(2) Turn the TG-2 Upper Flange about 4 to 6 turns and install it to the shaft. After installation, perform the TG-2 Upper Flange Height Preset.

- Turn the TG-2 Upper Flange and adjust the height of TG-2 as shown in the figure.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.


TG-2 Upper Flange
TG-2 Roller
TG-2 Sleeve
TG-2 Lower Flange
compression spring


TG-2 Upper Flange
TG-2 Roller
18.6mm
TG-2 Lower Flange
upper surface of mechanical chassis

4-10. REPLACEMENT OF S REEL TABLE ASSEMBLY

Tool: Sony Oil
Cassette Tape
Torque Cassette

Removal:

(1) Pull out the Mechanical Deck Block referring to Section 2-3.
(2) Remove the Cassette-up Compartment referring to Section 2-4.
(3) Remove the S Brake referring to Section 4-4.
(4) Remove the Tension Regulator Band Assembly referring to Section 4-12.
(5) Remove S Reel Table Assembly.

Installation:

(1) Apply a half drop of oil on the top of shaft A. (Fig. A)
(2) Move RK Gear in the direction of the arrow F. Move UL Brake in the direction of the arrow G. Move LB Brake in the direction of the arrow H.
(3) Install the S Reel Table Assembly to the shaft A.
(4) Assemble the parts with removal steps (1) to (4) in reverse order.
(5) Adjust the Tension Regulator FWD Position referring to Section 4-13.
(6) Perform the FWD Back Tension Adjustment referring to Section 5-1.

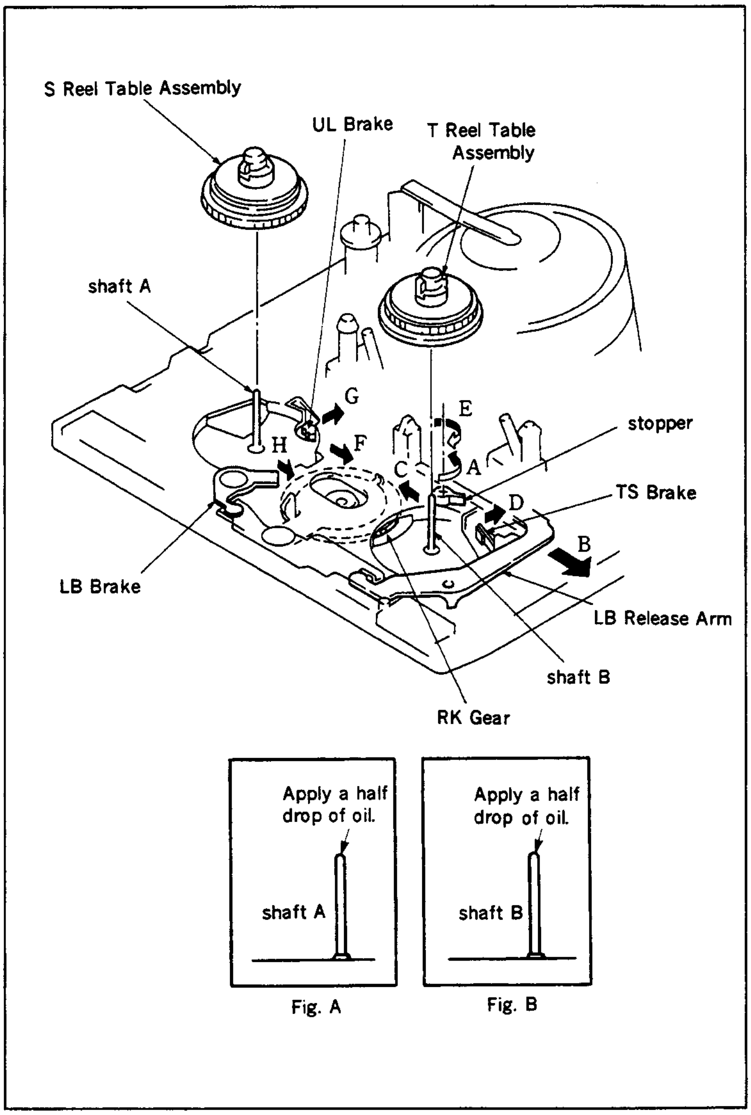

S Reel Table Assembly
UL Brake
T Reel Table Assembly
shaft A
G
E
stopper
H
F
C
A
D
TS Brake
B
LB Brake
LB Release Arm
shaft B
RK Gear
Apply a half drop of oil.
shaft A
Apply a half drop of oil.
shaft B

Fig. A

Fig. B

4-11. REPLACEMENT OF T REEL TABLE ASSEMBLY

Tool: Sony Oil

Removal:

(1) Pull out the Mechanical Deck Block referring to Section 2-3.
(2) Remove the Cassette-up Compartment referring to Section 2-4.
(3) Remove the T Brake referring to Section 4-4.
(4) Turn stopper about 90 degrees in the direction of the arrow A.
(5) Move LB Release Arm in the direction of the arrow B and remove T Reel Table Assembly.

Installation:

(1) Apply a half drop of oil on the top of shaft B. (Fig. B)
(2) Move RK Gear in the direction of the arrow C. Move TS Brake in the direction of the arrow D.
(3) Move LB Release Arm in the direction of the arrow B and install the T Reel Table Assembly to the shaft B.
(4) Turn the stopper in the direction of the arrow E as far as it will go.
(5) Assemble the parts with removal steps (1) to (3) in reverse order.

4-12. REPLACEMENT OF TENSION REGULATOR BAND ASSEMBLY AND TENSION REGULATOR ARM ASSEMBLY

Tool: Sony Oil
Cassette Tape
Torque Cassette

Removal:

(1) Pull out the Mechanical Deck Block referring to Section 2-3.

(2) Remove the Cassette-up Compartment referring to Section 2-4.

(3) Open the VO-33P and VO-32P Boards referring to Section 2-5.

(4) Remove the SS-43P Board referring to Section 2-5.

(5) Remove the TL Holder Plate referring to Section 4-5.

(6) Remove a fixing screw.

(7) Remove Tension Regulator Band Assembly from the shaft of Tension Regulator Arm Assembly with a thin flatblade screwdriver. Be careful not to damage the Tension Regulator Band and touch the felt portion of it.

(8) Remove a tension spring.

(9) Remove stopper washer from the back of mechanical chassis. Remove Tension Regulator Arm Assembly.

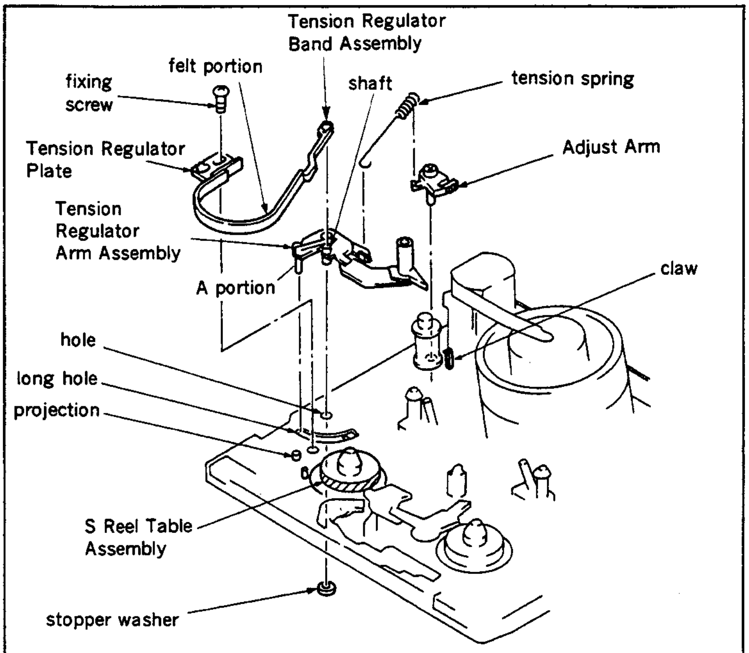
(10) Release claw and remove Adjust Arm.

Installation:

(1) Engage the Adjust Arm so that the claw can be locked as shown in figure A.

(2) Apply a half drop of oil to the fixing hole of the Tension Regulator Arm Assembly.

(3) Install Tension Regulator Arm Assembly so that the A portion is positioned in the side of arrow A from Switch Lever Assembly. (Fig.B)


Tension Regulator Band Assembly
felt portion
fixing screw
shaft
tension spring
Tension Regulator Plate
Adjust Arm
Tension Regulator Arm Assembly
claw
A portion
hole
long hole
projection
S Reel Table Assembly
stopper washer

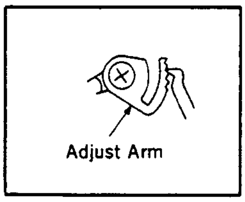


Fig. A

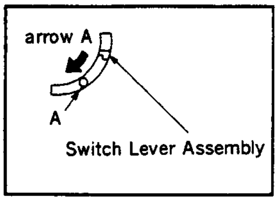

arrow A
A
Switch Lever Assembly

Fig. B

(4) Hold the Tension Regulator Arm Assembly and install it with the stopper washer from the back of the mechanical chassis.

(5) Hook the R hook side of the tension spring to the Adjust Arm as shown in the figure. Hook the opposite side of the tension spring to the Tension Regulator Arm Assembly.

(6) Install the Tension Regulator Band Assembly to the shaft of the Tension Regulator Arm Assembly so that the felt portion is along the shaded portion of S Reel Table Assembly. Be careful not to damage the Tension Regulator Band Assembly and touch the felt portion.

(7) Install Tension Regulator Plate portion of the Tension Regulator Band Assembly to the projection of the mechanical chassis and thread the fixing screw but do not tighten.

(8) Install the TL Holder Plate referring to Section 4-5.

(9) Assemble the parts with removal steps (2) to (4) in reverse order.

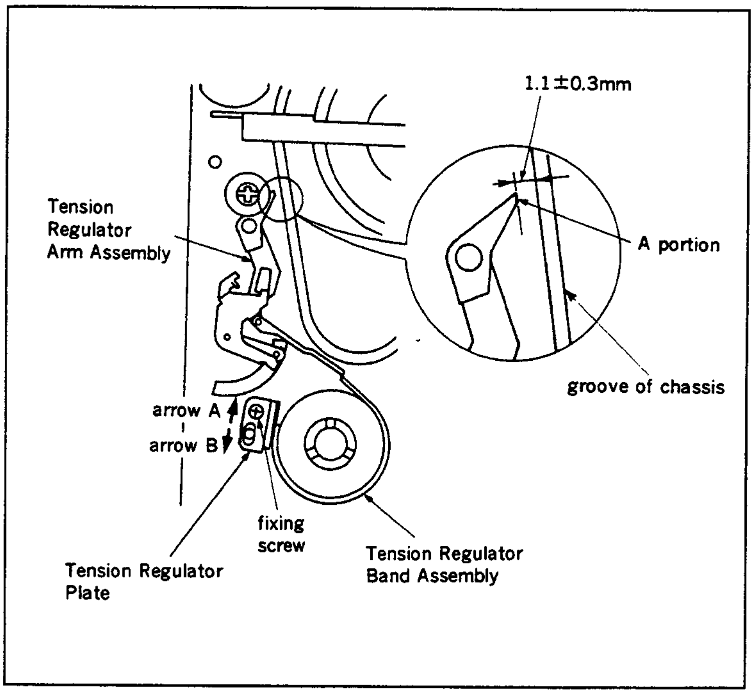
(10) Install the Mechanical Deck Block.

(11) Adjust the Tension Regulator FWD Position referring to Section 4-13.

(12) Perform the FWD Back Tension Adjustment referring to Section 5-1.

4-13. TENSION REGULATOR FWD POSITION PRESET

Tool: Cassette Tape


1.1±0.3mm
Tension Regulator Arm Assembly
A portion
groove of chassis
arrow A
arrow B
fixing screw
Tension Regulator Plate
Tension Regulator Band Assembly

Removal:

(1) Remove the Cassette Lid and Side Panel (Left) Assembly referring to Section 2-2.

(2) Insert a cassette tape and put the unit into the PLAY mode.

(3) Check that the clearance between A portion of the Tension Regulator Arm Assembly and groove of the chassis is 1.1 ± 0.3 mm. When it is out of the specification, eject the cassette tape and perform the following adjustments.

(4) Loosen the fixing screw of the Tension Regulator Band Assembly.

(5) If the clearance more than the specification, move the Tension Regulator Plate in the direction of the arrow A and tighten the fixing screw. If the space is less than the specification, move the Tension Regulator Plate in the direction of the arrow B and tighten the fixing screw.

(6) Perform steps (2) and (3) again and check that the clearance meets the required specification.

Note: Use a cassette tape which has been advanced half way through minutes.

4-14. REPLACEMENT OF DRUM ASSEMBLY AND CONDENSATION SENSOR

Removal:

(1) After putting the unit into the EJECT mode, pull out the Mechanical Deck Block referring to Section 2-3.

(2) Disconnect flexible board of Drum from the RP-56P Board. Disconnect two connectors of Drum from the SS-43P Board.

(3) Remove the Cassette-up Compartment referring to Section 2-4.

(4) Remove the HC Roller Assembly referring to Section 4-1.

(5) Remove the Guide Guard Assembly referring to Section 4-2.

(6) Remove a fixing screw and remove Shaft Ground Terminal.

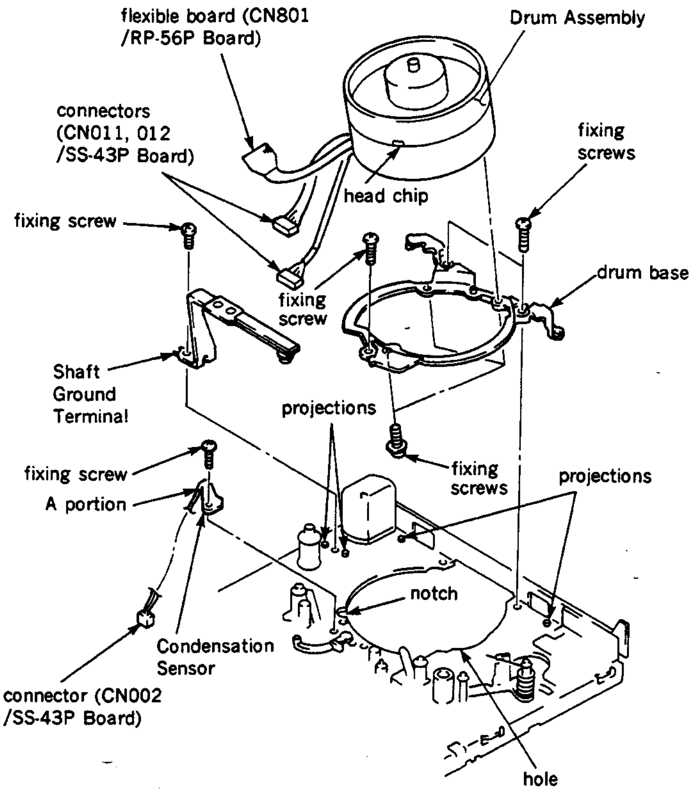
(7) Remove the three fixing screws of drum base and remove Drum Assembly with the drum base from the mechanical chassis. Be careful not to cut the flexible board or harness.

(8) Remove three fixing screws and remove Drum Assembly from the drum base.

(9) Disconnect connector of Condensation Sensor from the SS-43P Board.

(10) Remove a fixing screw and remove the Condensation Sensor.

Note: Be careful not to touch the head chip.


flexible board (CN801
/RP-56P Board)
Drum Assembly
connectors
(CN011, 012
/SS-43P Board)
fixing
screws
head chip
fixing screw
drum base
fixing
screw
Shaft
Ground
Terminal
projections
fixing screw
A portion
fixing
screws
projections
notch
Condensation
Sensor
connector (CN002
/SS-43P Board)
hole

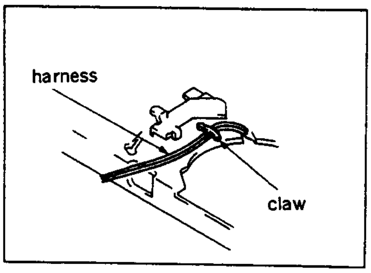

harness
claw

Fig. A

Installation:

(1) Put the A portion of the Condensation Senser into the notch of the mechanical chassis and tighten the fixing screw.

(2) Connect the connector of the Condensation Senser to the connector CN002 on the SS-43P Board.

(3) Pinch the harness of the Condensation Senser to the Plate SS Assembly's claw of the back of mechanical chassis. (Fig. A)

(4) Put the Drum Assembly to the two projections of the drum base and tighten three fixing screws.

(5) Through the connectors and flexible board into the hole of the mechanical chassis. Put the drum base to the two projections of the mechanical chassis and tighten the three fixing screws.

(6) Put the Shaft Ground Terminal to the two projections of the mechanical chassis and tighten the fixing screw.

(7) Install the parts with removal steps (3) to (5) in reverse order.

(8) Connect the 4P connector (black) to CN011 on the SS-43P Board. Connect the 4P connector (red) to CN012 on the SS-43P Board. Connect the flexible board to CN801 on the RP-56P Board.

Note: Be careful not to cut the flexible board or harness. Be careful not to touch the head chip.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.

4-15. REPLACEMENT OF EJECT LEVER, SWITCH LEVER ASSEMBLY AND PINCH SUB ARM ASSEMBLY

Tool: Mode Selector
Sony Grease
Sony Oil

Removal:

(1) Remove the Capstan Motor referring to Section 4-3.

(2) Put the unit into the STOP mode.

(3) Release claw A and remove Eject Lever.

(4) Remove stopper washer A and remove Switch Lever Assembly.

(5) Remove Pinch Load Spring.

(6) Remove stopper washer B and remove Pinch Sub Arm Assembly.

Installation:

(1) Smear a grease to shaft A. (Fig. A)

(2) While putting the A portion of the Pinch Sub Arm Assembly into the longitudinal hole, put the pin into the notch of the Loading Lever Assembly.

(3) Fasten stopper washer B.

(4) Hook the B portion of the Pinch Load Spring between claw B and chassis. Hook the C portion of the Pinch Load Spring to the claw B, and install it.

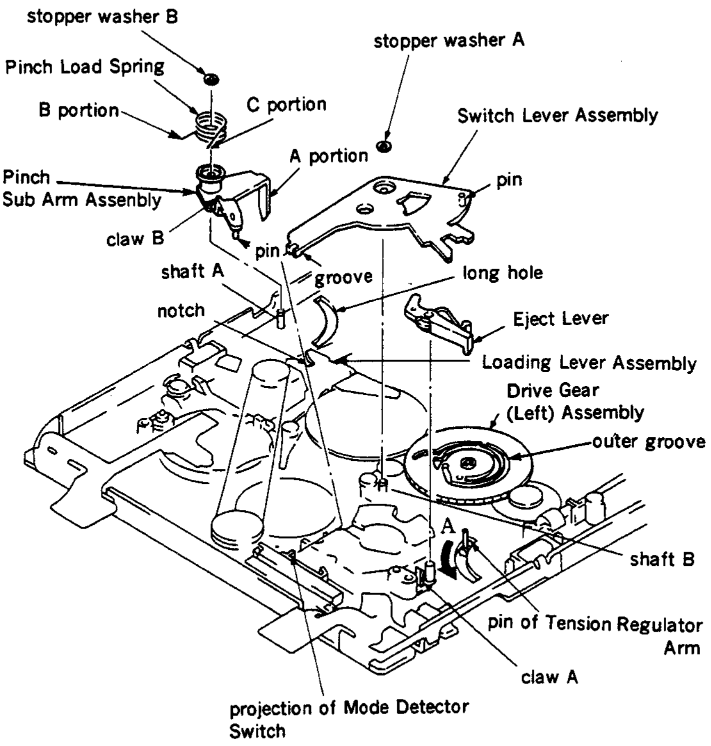
(5) Apply a half drop of oil to shaft B. (Fig. B)

(6) Put the groove of the Switch Lever Assembly to the projection of the Mode Detector Switch and assemble the Switch Lever Assembly to shaft B. Put the pin of the Switch Lever Assembly into the outer groove of Drive Gear (left) Assembly. If the Tension Regulator Arm Assembly is installed, move the pin of the Tension Regulator Arm Assembly in the direction of the arrow A.

(7) Fasten the stopper washer A.

(8) Install the Eject Lever and lock claw A.

(9) After putting the unit into the ULD mode, install the Capstan Motor referring to Section 4-3.


stopper washer B
stopper washer A
Pinch Load Spring
B portion
C portion
Switch Lever Assembly
A portion
Pinch Sub Arm Assenbly
pin
claw B
pin
shaft A
groove
long hole
notch
Eject Lever
Loading Lever Assembly
Drive Gear (Left) Assembly
outer groove
A
shaft B
pin of Tension Regulator Arm
claw A
projection of Mode Detector Switch

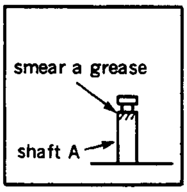

smear a grease
shaft A

Fig. A

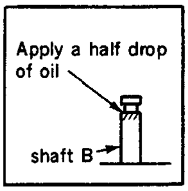

Apply a half drop of oil
shaft B

Fig. B

4-16. REPLACEMENT OF TIMING BELT (L), RC GEAR ASSEMBLY, LOADING LEVER ASSEMBLY, TIMING BELT (S) AND CONNECTING GEAR ASSEMBLY

Tool: Mode Selector
Sony Oil
Sony Grease

Removal:

(1) Remove the Capstan Motor referring to Section 4-3.

(2) Remove the Pinch Sub Arm Assembly referring to Section 4-15.

(3) Put the unit into the STOP mode.

(4) Remove stopper washer A. Remove RC Gear Assembly together with Timing Belt (L) from shaft A.

(5) Remove the Timing Belt (L) from Idler Pulley Assembly.

(6) Remove stopper washer B. While pushing LB Release Arm in the direction of arrow A, remove Loading Lever Assembly.

(7) Turn the stopper about 90 degrees in the direction of the arrow B.

(8) Remove Connecting Gear Assembly together with Timing Belt (S) from shaft B. Be careful not to touch the flange portion. (Fig. D)

(9) Remove the Timing Belt (S) from the Idler Pulley Assembly.

Installation:

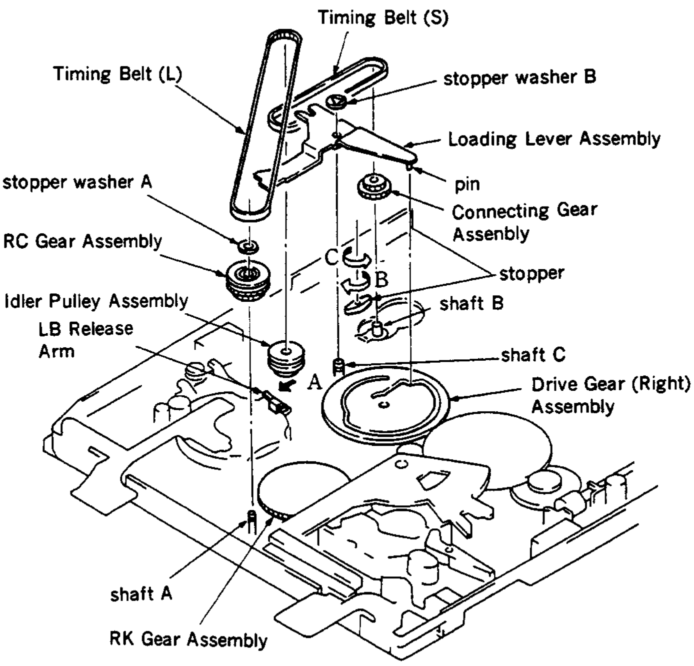
(1) Apply a half drop of oil to shaft B. (Fig. F)

(2) Hook the Timing Belt (S) to the Connecting Gear Assembly and hook the opposite side of it to the gear of the Idler Pulley Assembly. (Fig. E)

(3) Install the Connecting Gear Assembly to shaft B with the Timing Belt (S) hooked on.

(4) Turn the stopper in the direction of arrow C as far as it will go.

(5) Apply a half drop of oil on shaft C. (Fig. A)


Timing Belt (S)
Timing Belt (L)
stopper washer B
Loading Lever Assembly
stopper washer A
pin
Connecting Gear Assenbly
RC Gear Assembly
C
B
stopper
Idler Pulley Assembly
shaft B
LB Release Arm
shaft C
A
Drive Gear (Right) Assembly
shaft A
RK Gear Assembly

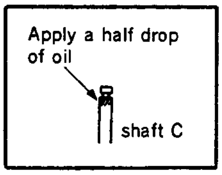

Apply a half drop of oil
shaft C

Fig. A

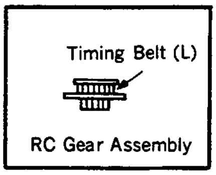

Timing Belt (L)
RC Gear Assembly

Fig. B

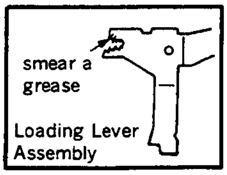

smear a grease
Loading Lever Assembly

Fig. C

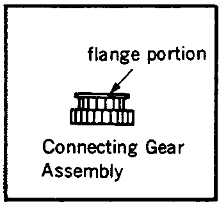

flange portion
Connecting Gear Assembly

Fig. D

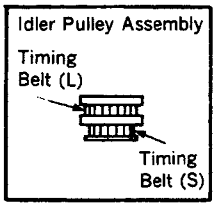

Idler Pulley Assembly
Timing Belt (L)
Timing Belt (S)

Fig. E

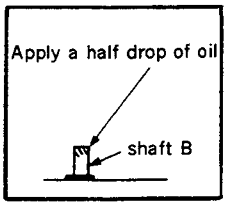

Apply a half drop of oil
shaft B

Fig. F

(6) Move the LB Release Arm in the direction of arrow A and put the Loading Lever Assembly to shaft C. Put the pin of the Loading Lever Assembly into the groove of Drive Gear (Right) Assembly.
(7) Fasten the stopper washer B.
(8) Hook the Timing Belt (L) to the gear of the RC Gear Assembly as shown in figure B and hook the opposite side of it to the gear of the Idler Pully Assembly. (Fig. E)
(9) Install the RC Gear Assembly with the Timing Belt (L) on to shaft A. Engage the RC Gear Assembly with the gear of RK Gear Assembly.
(10) Fasten the stopper washer A.
(11) Smear a grease to the Loading Lever Assembly as shown in fig. C.
(12) Install the Pinch Sub Arm Assembly referring to Section 4-15.
(13) After putting the unit into the ULD mode, install the Capstan Motor referring to Section 4-3.

4-17. REPLACEMENT OF IDLER PULLEY, TS BRAKE ASSEMBLY, LB GEAR ASSEMBLY AND RK GEAR ASSEMBLY

Tool: Mode Selector
Sony Oil

Removal:

(1) Remove the Capstan Motor referring to Section 4-3.
(2) Remove the Switch Lever Assembly referring to Section 4-15.
(3) Remove the Timing Belt (L), RC Gear Assembly, Loading Lever Assembly, Timing Belt (S) and Connecting Gear Assembly referring to Section 4-16.
(4) Remove stopper washer A and remove Idler Pulley. Be careful not to touch the flange portion of the Idler Pulley. (Fig. C)
(5) Release the claw and remove TS Brake Assembly.
(6) Remove torsion spring (LB).
(7) Remove stopper washer B and remove LB Gear Assembly.
(8) Remove RK Gear Assembly.

Installation:

(1) Apply a half drop of oil to shaft A. (Fig. A)

(2) Install the RK Gear Assembly horizontally to the shaft A.

(3) Apply a half drop of oil to shaft B. (Fig. B)

(4) Install the LB Gear Assembly to shaft B with stopper washer B.

(5) Put torsion spring (LB) into shaft C. Hook it to the notch of the mechanical chassis and A portion of the LB Gear Assembly.

(6) Install the TS Brake Assembly and lock the claw.

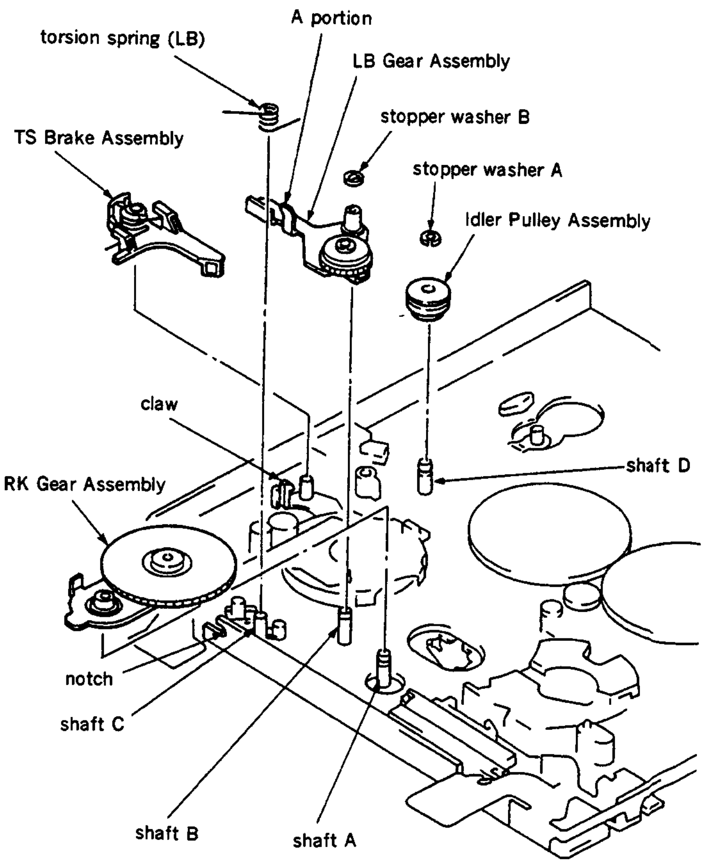
(7) Apply a half drop of oil to shaft D. (Fig. D)

(8) Install the Idler Pulley to shaft D. Fasten the stopper washer A.

(9) Install the Timing Belt (L), RC Gear Assembly, Loading Lever Assembly, Timing Belt (S) and Connecting Gear Assembly referring to Section 4-16.

(10) Install the Switch Lever Assembly referring to 4-15.

(11) After putting the unit into the ULD mode, install the Capstan Motor referring to Section 4-3.


A portion
torsion spring (LB)
LB Gear Assembly
stopper washer B
TS Brake Assembly
stopper washer A
Idler Pulley Assembly
claw
shaft D
RK Gear Assembly
notch
shaft C
shaft B
shaft A

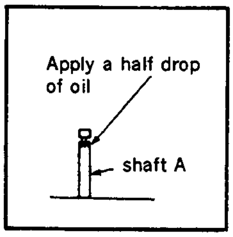

Apply a half drop of oil
shaft A

Fig. A

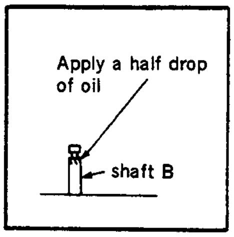

Apply a half drop of oil
shaft B

Fig. B

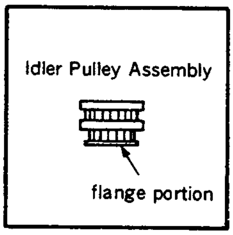

Idler Pulley Assembly
flange portion

Fig. C

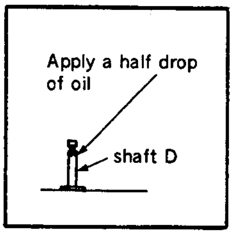

Apply a half drop of oil
shaft D

Fig. D

4-18. REPLACEMENT OF UL GEAR, UL BRAKE, UL ARM AND LB LEAF SPRING

Tool: Sony Oil

Removal:

(1) Remove the Switch Lever Assembly referring to Section 4-15.

(2) Remove stopper washer and remove UL Gear.

(3) Remove UL Arm, 1.6 mm-diameter poly washer and LB Leaf Spring.

(4) Remove UL Brake.

Installation:

(1) Install the UL Brake.

(2) Apply a half drop of oil to the shaft. (Fig. A)

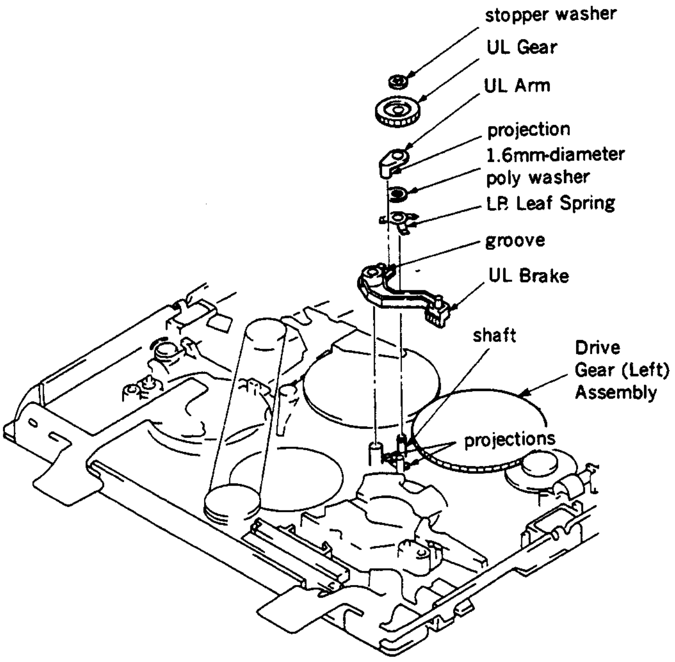
(3) Install the LB Leaf Spring to the shaft and fasten it with the 1.6mm-diameter poly washer as shown in fig. B.

(4) Install the UL Arm to the shaft so that the projection is put into the groove of the UL Brake.

(5) Install the UL Gear to the shaft. Engage it with the gear of the Drive Gear (Left) Assembly.

(6) Fasten the stopper washer.

(7) Install the Switch Lever Assembly referring to Section 4-15.


stopper washer
UL Gear
UL Arm
projection
1.6mm-diameter poly washer
LB Leaf Spring
groove
UL Brake
shaft
Drive Gear (Left) Assembly
projections

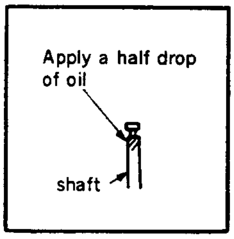

Apply a half drop of oil
shaft

Fig. A

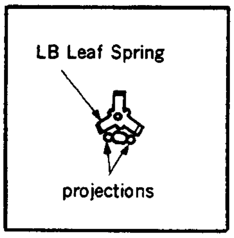

LB Leaf Spring
projections

Fig. B

4-19. REPLACEMENT OF COASTER (RIGHT) ASSEMBLY AND DRIVE GEAR (RIGHT) ASSEMBLY

Tool: Mode Selector
Sony Oil
Sony Grease

Removal:

(1) Remove the Capstan Motor referring to Section 4-3.

(2) Remove the Drum Assembly referring to Section 4-14.

(3) Remove the Switch Lever Assembly referring to Section 4-15.

(4) Remove the Timing Belt (L), RC Gear Assembly and Loading Lever Assembly referring to Section 4-16.

(5) Remove fixing screw A. Remove the Coaster Leaf Spring and Coaster (Right) Assembly.

(6) Remove two fixing screws B and remove Reinforcement Plate TT.

(7) Remove the stopper washer 1.5 and remove the Drive Gear (Right) Assembly.

Installation:

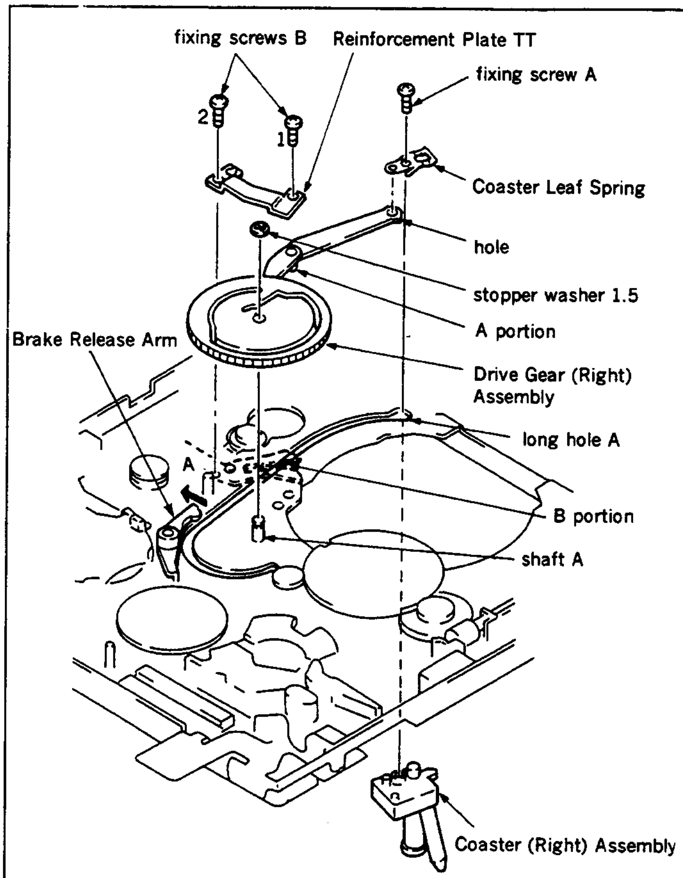
(1) Smear a grease to the mechanical chassis as shown in fig. A.

(2) Apply a half drop of oil to shaft A. (Fig. F)

(3) Smear a grease to pin, shaft and projection of the Coaster (Right) Assembly. (Fig. D)

(4) Install the pin and shaft of the Coaster (Right) Assembly to the longitudinal hole A of the mechanical chassis.

(5) Move the Brake Release Arm in the direction of the arrow A.


fixing screws B
Reinforcement Plate TT
fixing screw A
2
1
Coaster Leaf Spring
hole
stopper washer 1.5
A portion
Brake Release Arm
Drive Gear (Right) Assembly
long hole A
A
B portion
shaft A
Coaster (Right) Assembly

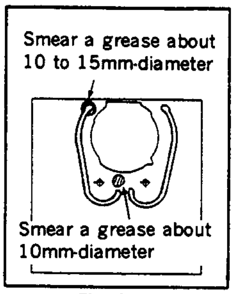

Smear a grease about 10 to 15mm-diameter
Smear a grease about 10mm-diameter

Fig. A

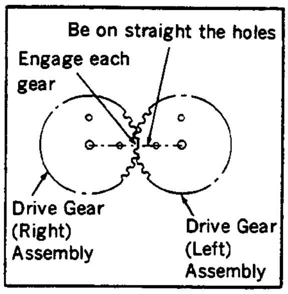

Be on straight the holes
Engage each gear
Drive Gear (Right) Assembly
Drive Gear (Left) Assembly

Fig. B

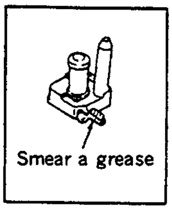

Smear a grease

Fig. C

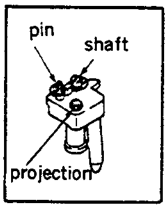

pin
shaft
projection

Fig. D

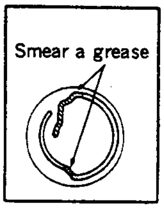
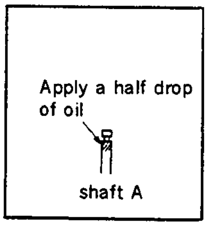

Smear a grease

Fig. E

Fig. F


Apply a half drop of oil
shaft A

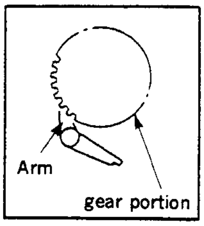

Arm
gear portion

Fig. G

(6) Put the A portion of the Drive Gear (Right) Assembly into the B portion and put the hole of it to the pin of the Coaster (Right) Assembly. Install the Drive Gear (Right) Assembly to shaft A. Engage it with Drive Gear (Left) Assembly as shown in fig. B. Check that the Brake Release Arm Assembly is under the gear portion of the Drive Gear Assembly. (Fig. G)

(7) Fasten the stopper washer 1.5.

(8) Put the Coaster Leaf Spring to the shaft and pin of the Coaster (Right) Assembly and install it with fixing screw A. At this time, the tightenning torque of fixing screw A is about 500 g.cm. If tightened too much, the Coaster (Right) Assembly and Coaster Leaf Spring will be damaged.

(9) Install the Reinforcement Plate TT to the projection of chassis and tighten the two fixing screws B in order.

(10) Smear a grease as shown in figures C and E.

(11) Install the Timing Belt (L), RC Gear Assembly and Loading Lever Assembly referring to Section 4-16.

(12) Install the Switch Lever Assembly referring to Section 4-15.

(13) After putting the unit into the ULD mode, install the Drum Assembly referring to Section 4-14.

(14) Install the Capstan Motor referring to Section 4-3.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.

4-20. REPLACEMENT OF COASTER (LEFT) ASSEMBLY AND DRIVE GEAR (LEFT) ASSEMBLY

Tool: Mode Selector
Sony Oil
Sony Grease

Removal:

(1) Remove the Capstan Motor referring to Section 4-3.

(2) Remove the Drum Assembly referring to Section 4-14.

(3) Remove the Switch Lever Assembly and Pinch Sub Arm Assembly referring to Section 4-15.

(4) Remove the Timing Belt (L), RC Gear Assembly and Loading Lever Assembly referring to Section 4-16.

(5) Remove the Coaster (Right) Assembly and Drive Gear (Right) Assembly referring to 4-19.

(6) Remove two fixing screws and remove Reinforcement Plate SS Assembly.

(7) Remove a fixing screw. Remove Coaster Leaf Spring and Coaster (Left) Assembly.

(8) Remove stopper washer 1.5 and remove Drive Gear (Left) Assembly.

Installation:

(1) Smear a grease to the mechanical chassis as shown in fig. A.

(2) Apply a half drop of oil to the shaft. (Fig. E)

(3) Smear a grease to the pin, shaft and projection of the Coaster (Left) Assembly. (Fig. B)

(4) Install the pin and shaft of the Coaster (Left) Assembly to the longitudinal hole of the mechanical chassis.

(5) Put the Drive Gear (Left) Assembly into the shaft and put the A portion into the longitudinal hole. Install the gear portion so that the gear portion is engaged with Wheel Gear and UL Gear.

(6) Put the hole of the Drive Gear (Left) Assembly to the pin of the Coaster (Left) Assembly.

(7) Fasten the stopper washer 1.5.

(8) Put the Coaster Leaf Spring to the shaft and pin of the Coaster (Left) Assembly and install it with fixing screw. At this time, the tightenning torque of the fixing screw is about 500 g.cm. If tightened too much, the Coaster (Left) Assembly and Coaster Leaf Spring will be damaged.

(9) Put the Reinforcement Plate SS Assembly to the projection of chassis and tighten the two fixing screws in order.

(10) Smear a grease as shown in figures C and D.

(11) Install the Coaster (Right) Assembly and Drive Gear (Right) Assembly referring to Section 4-19.

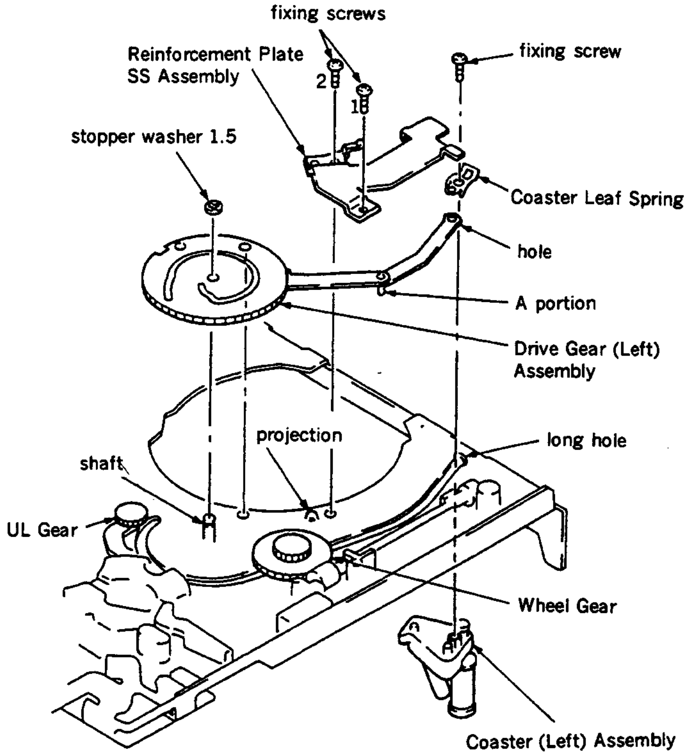
(12) Install the Timing Belt (L), RC Gear Assembly and Loading Lever Assembly referring to Section 4-16.

(13) Install the Switch Lever Assembly and Pinch Sub Arm Assembly referring to Section 4-15.

(14) After putting the unit into the ULD mode, install the Drum Assembly referring to Section 4-14.

(15) Install the Capstan Motor refering to Section 4-3.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.


fixing screws
Reinforcement Plate SS Assembly
2
1
fixing screw
stopper washer 1.5
Coaster Leaf Spring
hole
A portion
Drive Gear (Left) Assembly
projection
long hole
shaft
UL Gear
Wheel Gear
Coaster (Left) Assembly

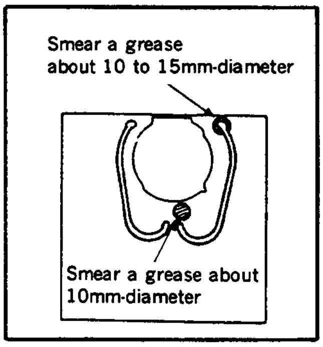

Smear a grease about 10 to 15mm-diameter
Smear a grease about 10mm-diameter

Fig. A

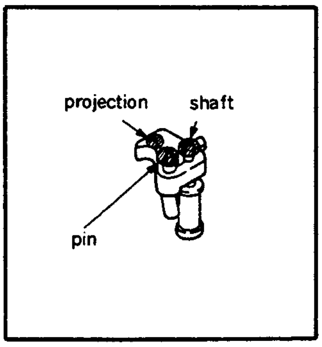

projection
shaft
pin

Fig. B

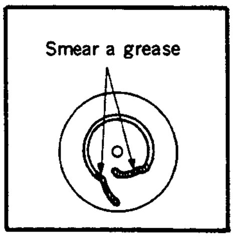

Smear a grease

Fig. C

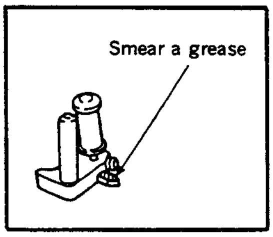

Smear a grease

Fig. D

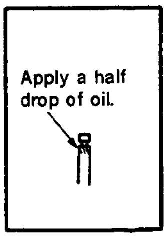
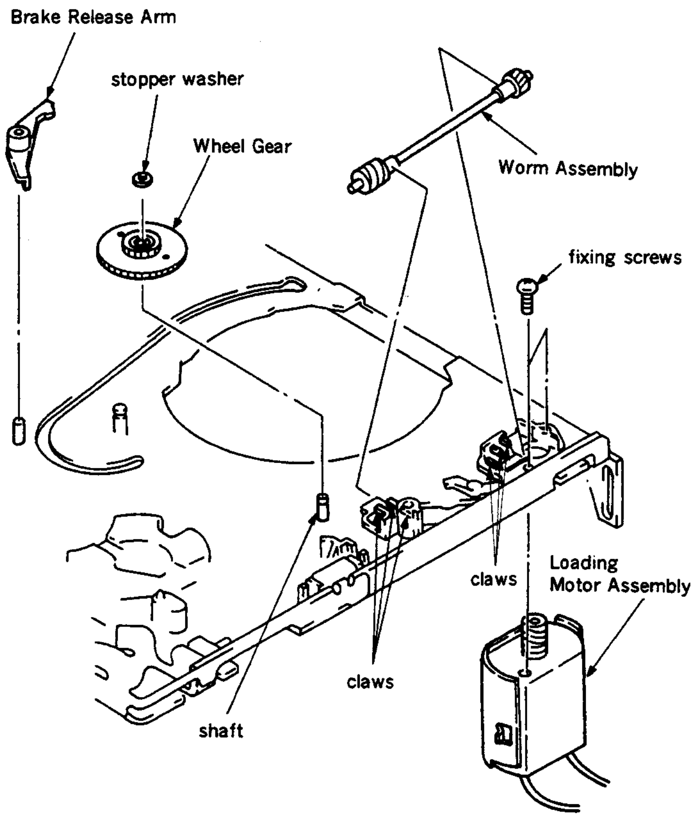

Apply a half drop of oil.

Fig. E

4-21. REPLACEMENT OF LOADING MOTOR, BRAKE RELEASE ARM, WHEEL GEAR AND WORM ASSEMBLY


Brake Release Arm
stopper washer
Wheel Gear
Worm Assembly
fixing screws
claws
Loading Motor Assembly
claws
shaft

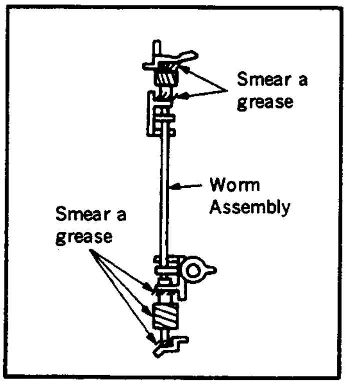

Smear a grease
Worm Assembly
Smear a grease

Fig. A

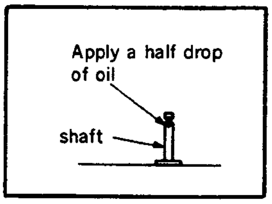

Apply a half drop of oil
shaft

Fig. B

Tool: Mode Selector
Sony Oil
Sony Grease

Removal:

(1) Remove the Capstan Motor referring to Section 4-3.

(2) Remove the Switch Lever Assembly and Pinch Sub Arm Assembly referring to Section 4-15.

(3) Remove the Timing Belt (L), RC Gear Assembly and Loading Lever Assembly referring to Section 4-16.

(4) Remove the Drive Gear (Right) Assembly referring to Section 4-19.

(5) Remove the Drive Gear (Left) Assembly referring to Section 4-20.

(6) Remove two fixing screws and remove Loading Motor Assembly.

(7) Remove Brake Release Arm.

(8) Remove stopper washer and remove Wheel Gear.

(9) Remove Worm Assembly from six claws.

Installation:

(1) Install the Worm Assembly to the six claws.

(2) Smear a grease to the five shaded portions of the Worm Assembly. (Fig. A)

(3) Apply a half drop of oil to the shaft. (Fig. B)

(4) Put the Wheel Gear to the shaft. Engage it with the gear of the Worm Assembly.

(5) Install the Brake Release Arm.

(6) Smear a grease to the whole gear portion of the Loading Motor Assembly.

(7) Install the Loading Motor Assembly to the mechanical chassis with the two fixing screws.

(8) Install the Drive Gear (Left) Assembly referring to Section 4-20.

(9) Install the Drive Gear (Right) Assembly referring to Seciton 4-19.

(10) Install the Timing Belt (L), RC Gear Assembly and Loading Lever Assembly referring to Section 4-16.

(11) Install the Switch Lever Assembly and Pinch Sub Arm Assembly referring to Section 4-15.

(12) After putting the unit into the ULD mode, install the Capstan Motor referring to Section 4-3.

4-22. REPLACEMENT OF ROTARY UPPER DRUM

Tool: Rotary Drum Tool
(supplied accessory of Repair Rotary Upper Drum)
L-shaped wrench
(across flat has 1.5 mm)

Removal:

(1) Unsolder six solders at A portion. Check that six terminals which are projected out from PC Board can be moved freely with a pair of tweezers, etc..

(2) Remove two fixing screws A. (Fig. A)

(3) Install tool A to the screw hole with two accessory supplied screws. Thread the accessory supplied hexagonal screws into the tool A, and Rotary Upper Drum will move up and can be removed. (Fig. B)

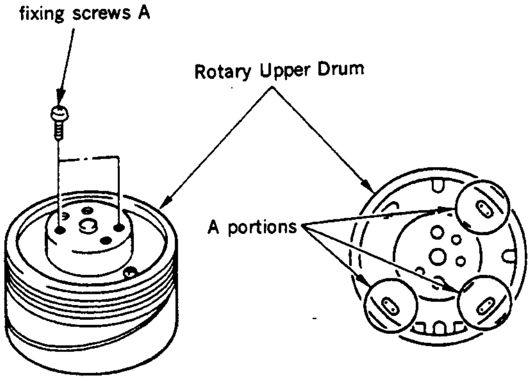

fixing screws A
Rotary Upper Drum
A portions

Fig. A

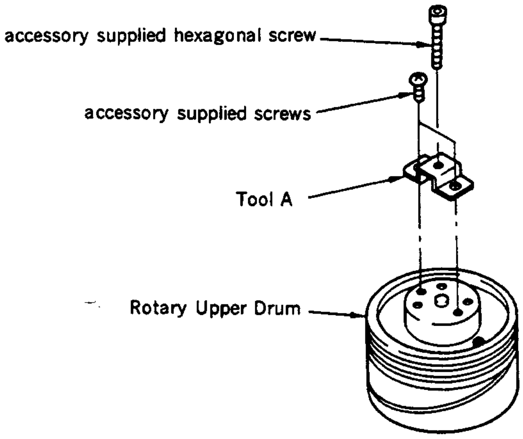

accessory supplied hexagonal screw
accessory supplied screws
Tool A
Rotary Upper Drum

Fig. B

Installation:

(1) Clean the flange surface and contact surface of the new Rotary Upper Drum. Check that no dust and flaw are left over.

(2) While adjusting the position of Rotary Upper Drum and positioning hole with tool B, insert the Rotary Upper Drum lightly.

Note: At this time, check that the terminals project out from the PC Board of the Rotary Upper Drum. When the terminals are caught, correct them with a pair of tweezers, etc.. (Fig. C)

(3) Remove tool B and lightly push down the Rotary Upper Drum by hand. If it does not down to the bottom, thread two fixing screws A to the Rotary Upper Drum alternately but do not tighten.

(4) Insert tool B into the positioning hole and check that it can be inserted smoothly again. If tool B cannot be inserted, loosen two fixing screws A and adjust the position of the Rotary Upper Drum by precision screwdriver etc..

(5) Tighten two fixing screws A.

(6) Solder the six terminals at the A portion.

Note: Be careful not to flow solder below the PC Board.

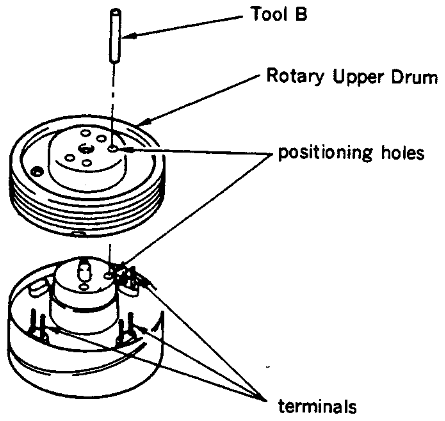
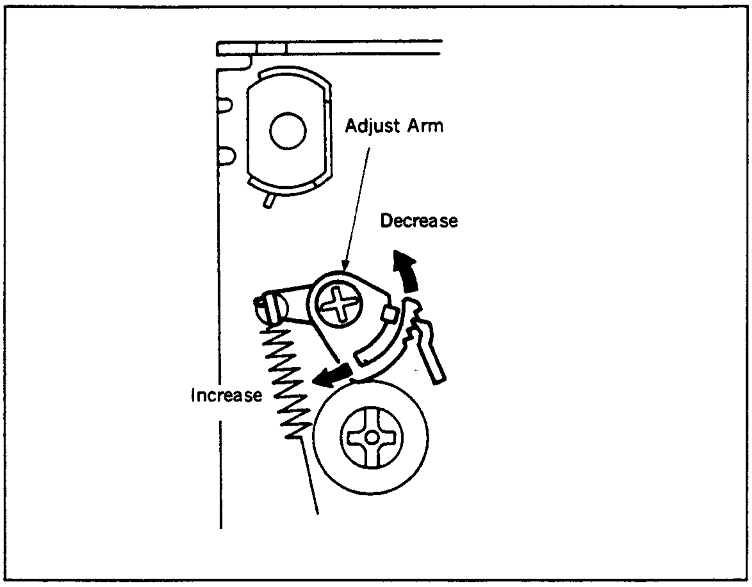


Fig. C

Note: After replacemnt, perform the Tape Path Adjustment referring to Section 6.

SECTION 5
TORQUE AND BACK TENSION ADJUSTMENT

5-1. FWD BACK TENSION ADJUSTMENT



(1) Insert a torque cassette to the unit.
(2) Put the unit into the PLAY mode. Check that the torque reading of S Reel Table meets required specification.

Spec. : 9 to 13 g.cm

(3) If the torque reading do not meet the required specification, adjust the Adjust Arm.

5-2. CHECK OF REEL TORQUE

. Setting of REV mode
Press PLAY button and then, press REW button continuously.

(1) Insert a torque cassette to the unit.
(2) Put the unit into the PLAY mode and check that the torque reading of T Reel Table meets required specification.

Spec. : 7 to 15 g.cm

(3) Put the unit into the REV mode and check that the torque reading of the S Reel Table meets required specification.

Spec. : 23 to 35 g.cm

(4) Put the unit into the REV mode and check that the torque reading of the T Reel Table meets required specification.

Spec. : 13 to 25 g.cm

(5) If the readings do not meet the required specifications, replace each Reel Table.

SECTION 6
TAPE PATH ADJUSTMENT

Alignment Information

[Track Shift]

8mm Video System employs a high precision tracking ATF (Automatic Track Finding) System which instantaneously controls tape running speed with four kinds of pilot signals. In this way, Tracking Adjustment Knob is unnecessary and it is possible to trace with accuracy. On the other hand, the adjustment of Tape Pathe System was difficult in the ATF System. It was impossible to adjust perfectly becasuse the ATF System automatically corrected even it small miss-tracking occurs. When perform Tracking Fine Adjustment, put into the Track Shift mode. The Track Shift mode can forcibly operate the ATF System and can shift the constant tracking amount about one-fifth. Therefore, the Tracking Fine Adjustment can perform easily. Track Shift Tool is not required.

Setting of Track Shift Mode

. Connect TP1 and TP2 on the SY-153P to grounds with shorting clips.

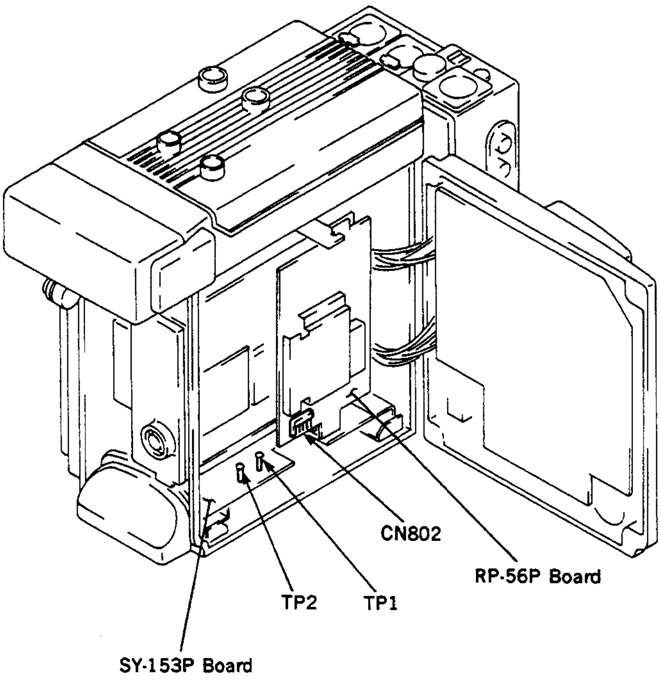
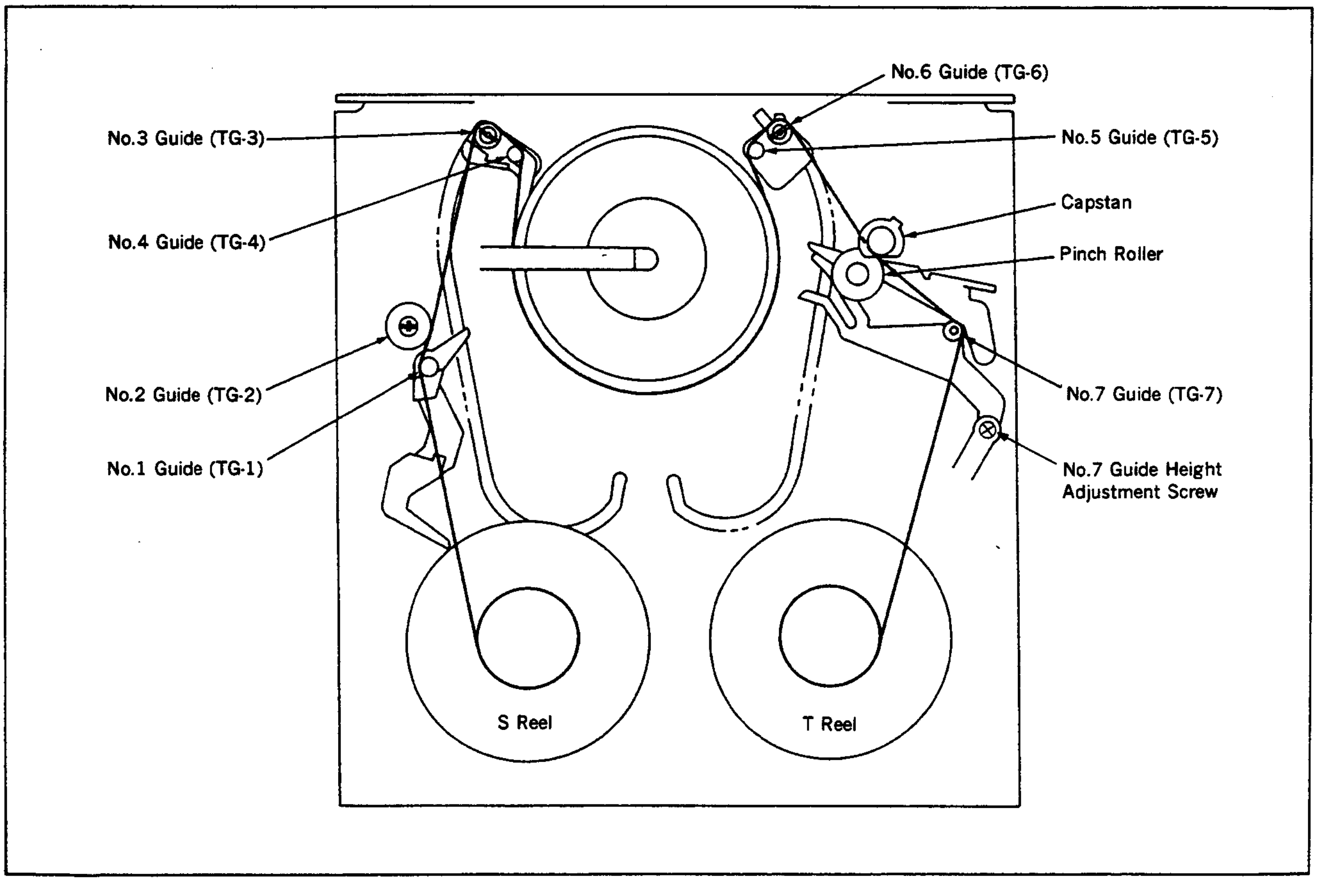


Fig. A

[Tape Guide Adjustment]

There are four Adjustment Guides as TG-2, 3, 6, and 7 Guides. If you want to adjust each guide, turn the Adjustment Screw as follows.

Guide	Adjustment Screw	Guide Adjustment
TG-2, 3, 6	Counter-clockwise	Up
	Clockwise	Down
TG-7	Counter-clockwise	Down
	Clockwise	Up


No.6 Guide (TG-6)
No.3 Guide (TG-3)
No.5 Guide (TG-5)
Capstan
No.4 Guide (TG-4)
Pinch Roller
No.2 Guide (TG-2)
No.7 Guide (TG-7)
No.1 Guide (TG-1)
No.7 Guide Height Adjustment Screw
S Reel
T Reel

6-1. PREPARATION FOR ADJUSTMENT

Tool: Oscilloscope
Alignment tape for tracking
(WR5-1CP)

Adjustment procedure:

(1) Clean tape path surfaces as Tape Guides, Drum, Capstan Shaft and Pinch Roller.

(2) Connect the oscilloscope as follows.
CH-1: CN802 pin-4 (PB RF OUT) on the
RP-56P Board
Refer to page6-1 fig. A.

(3) Connect CN802 pin-6 (GND) and CN802 pin-2 (RF SW. P) on the RP-56P Board with a shoting clip. Refer to P6-1 fig. A

(4) Play back the alignment tape.

(5) Check that the RF waveform of both entrance and exit sides are flat. (Fig. A)

(6) Set the Track Shift mode.

(7) Check that the form and fluctuation of the RF waveform meet the specification 1. (Fig. B)

(8) If do not meet the specifications at step (5) and (7), adjust as follows.

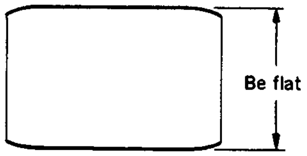
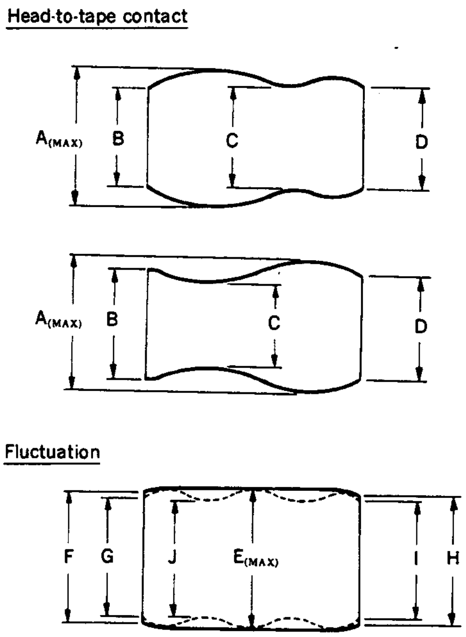


Fig. A



Spec. 1 :

- Head-to-tape contact

$\frac{B}{A} \geqq 0.7$

$\frac{C}{A} \geqq 0.7$

$\frac{D}{A} \geqq 0.7$

- Fluctuation

$\frac{G}{F} \geqq 0.85$

$\frac{J}{E} \geqq 0.85$

$\frac{I}{H} \geqq 0.85$

Fig. B

6-2. TRACKING ADJUSTMENT

Tool: Oscilloscope
Alignment tape for tracking
(WR5-1CP)

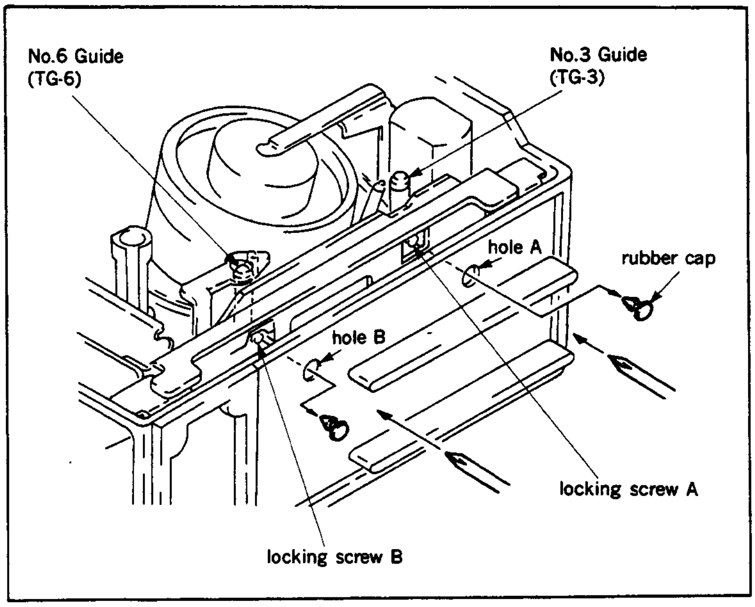
Adjustment procedure:

(1) Remove rubber caps from holes A and B.

(2) Play back the alignment tape.

(3) Put a precision screwdriver into hole A and loosen locking screw A a little. Turn No. 3 Guide (TG-6) and flatten the waveform of entrance side.

(4) Put a precision screwdriver into hole B and loosen locking screw B a little. Turn No. 6 Guide (TG-6) and flatten the waveform of exit side.


No.6 Guide
(TG-6)
No.3 Guide
(TG-3)
hole A
rubber cap
hole B
locking screw A
locking screw B

Note: Be careful not to turn the locking screws so much or the guides will move easily.

6-3. TRACKING FINE ADJUSTMENT

Tool: Oscilloscope
Alignment tape for tracking
(WR5-1CP)
Cassette tape (E5-90HME)

Adjustment procedure:

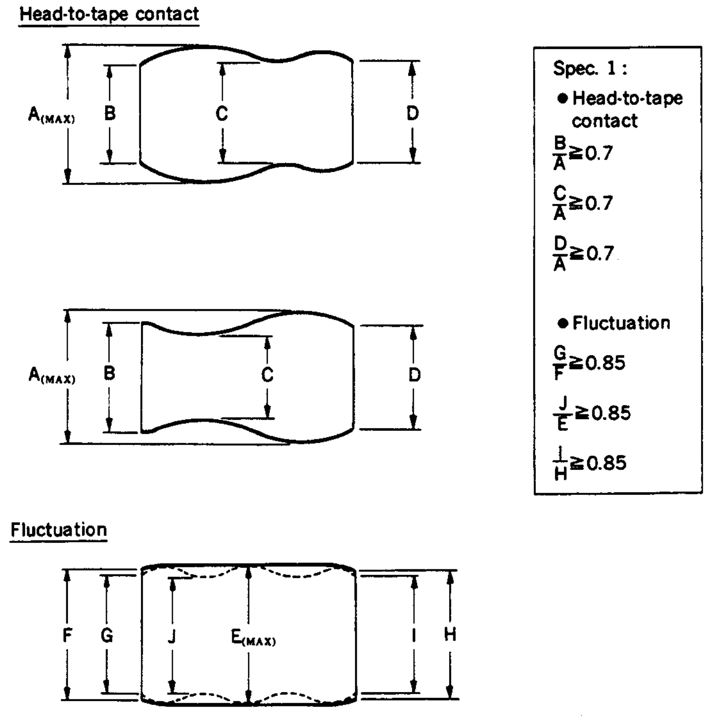
(1) Set the Track Shift mode.

(2) Play back the alignment tape.

(3) Perform Tape Entrance Side Adjustment.

(i) Turn the No. 3 Guide so that the form and fluctuation of the RF waveform meet specification 1. (Fig. A)

(ii) Tighten locking screw A. Check that the waveform of entrance side does not change.


Head-to-tape contact
A(MAX)
B
C
D
Fluctuation
F
G
J
E(MAX)
I
H

Spec. 1 :
- Head-to-tape contact
  $\frac{B}{A} \geq 0.7$
  $\frac{C}{A} \geq 0.7$
  $\frac{D}{A} \geq 0.7$
- Fluctuation
  $\frac{G}{F} \geq 0.85$
  $\frac{J}{E} \geq 0.85$
  $\frac{I}{H} \geq 0.85$

Fig. A

(4) Peform Tape Exit Side Adjustment.
   (i) Turn the No. 6 Guide so that the form and fluctuation of the RF waveform meet specification 1. (Fig. A)

   When the RF waveform of exit side is flat.

   (ii) Turn the No. 6 Guide clockwise a little and adjust the waveform as shown in fig. B.
   (iii) Tighten locking screw B. Check that the waveform of exit side does not change.

(5) Perform Waveform Check of the Self-recording and Play Back.
   (i) Eject the alignment tape.
   (ii) Perform the recording with no signal to the cassette tape which part is between tape top and tape middle.
   (iii) Check that the form and fluctuation of the RF waveform meet specification 2. (Fig. C) If do not meet the specification, perform steps (2) to (4) again.

(6) After adjustment, perform Section 6-7. Check After Adjustment.

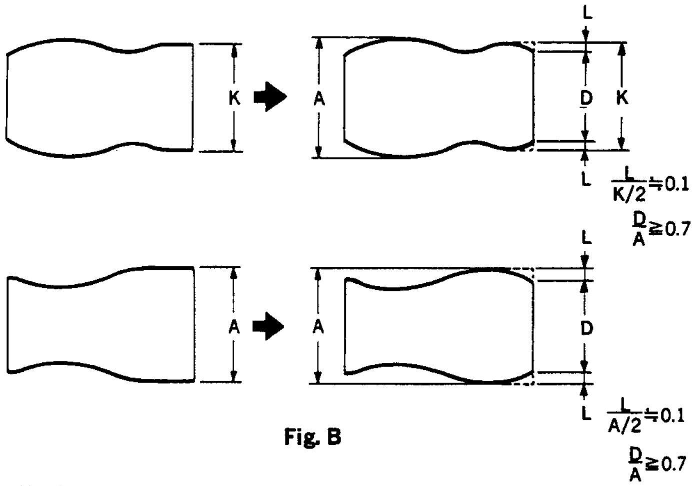
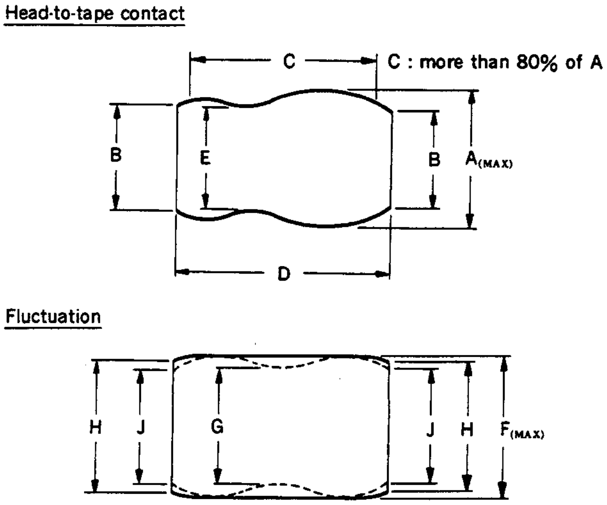

K
A
L
D
K
L
$\frac{L}{K/2} \fallingdotseq 0.1$
$\frac{D}{A} \geq 0.7$
A
A
L
D
L
$\frac{L}{A/2} \fallingdotseq 0.1$
$\frac{D}{A} \geq 0.7$

Fig. B


Head-to-tape contact
C
C : more than 80% of A
B
E
B
A(MAX)
D
Fluctuation
H
J
G
J
H
F(MAX)

Spec. 2:

- ● Head-to-tape contact $\frac{B}{A} \geq 0.7$ $\frac{C}{D} \geq 0.8$ $\frac{E}{A} \geq 0.8$
- ● Fluctuation $\frac{G}{F} \geq 0.9$ $\frac{J}{H} \geq 0.9$

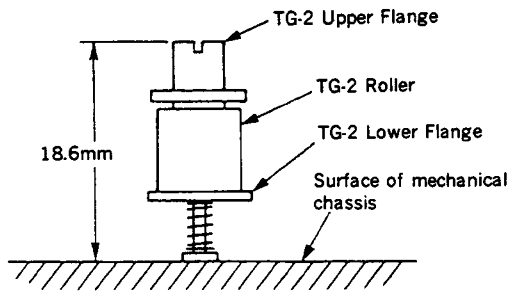
Fig. C

6–4. NO. 2 GUIDE ADJUSTMENT

When turning or replacing No. 2 Guide, adjust after performing No. 2 Guide (TG–2) Height Preset.

6–4–1. No. 2 Guide (TG–2) Height Preset

(1) Turn TG–2 Upper Flange and adjust the height of the TG–2 as shown in the figure.


TG-2 Upper Flange
TG-2 Roller
TG-2 Lower Flange
18.6mm
Surface of mechanical chassis

6-4-2. No. 2 Guide (TG-2) Adjustment

Tool: Oscilloscope
Alignment tape for tracking (WR5-1CP)
Cassette tape (E5-90HME)
Small adjustment mirror

Note: Setting of REV mode and CUE mode are as follows.

REV mode: While pressing PLAY button, press REW button. If removing a hand from the REW button, it back to the PLAY mode.

CUE mode: While pressing PLAY button, press F FWD button. If removing a hand from the F FWD button, it back to the PLAY mode.

Adjustment procedure:

(1) Play back a cassette tape and put into the REV mode.

(2) Check that the tape does not curl at the lower flange of the No. 2 Guide. (Fig. A) If the tape curls, turn the upper flange of the No. 2 Guide clockwise with a screwdriver and lower the guide untill the tape curl disappears.

(3) Play back the alingment tape.

(4) Perform the Tracking Adjustment and Tracking Fine Adjustment referring to Sections 6-2 and 6-3.

(5) Put into the Track Shift mode and play back after the CUE/REV mode. Check that the RF waveform recovers flatly within two seconds.

(6) If the RF waveform does not recovers flatly (Fig. B), turn the upper flange of the No.2 Guide (TG-2) counterclockwise at 90 degrees. Perform step (5) again.

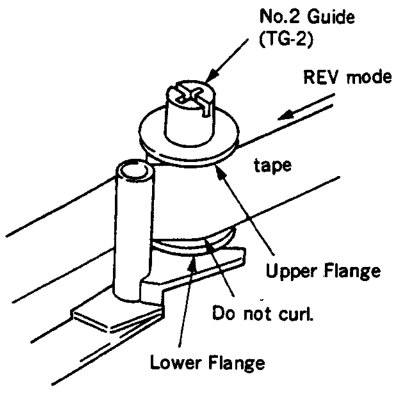


Fig. A

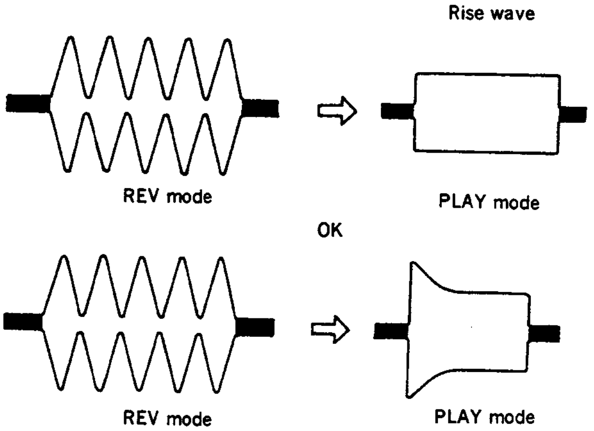


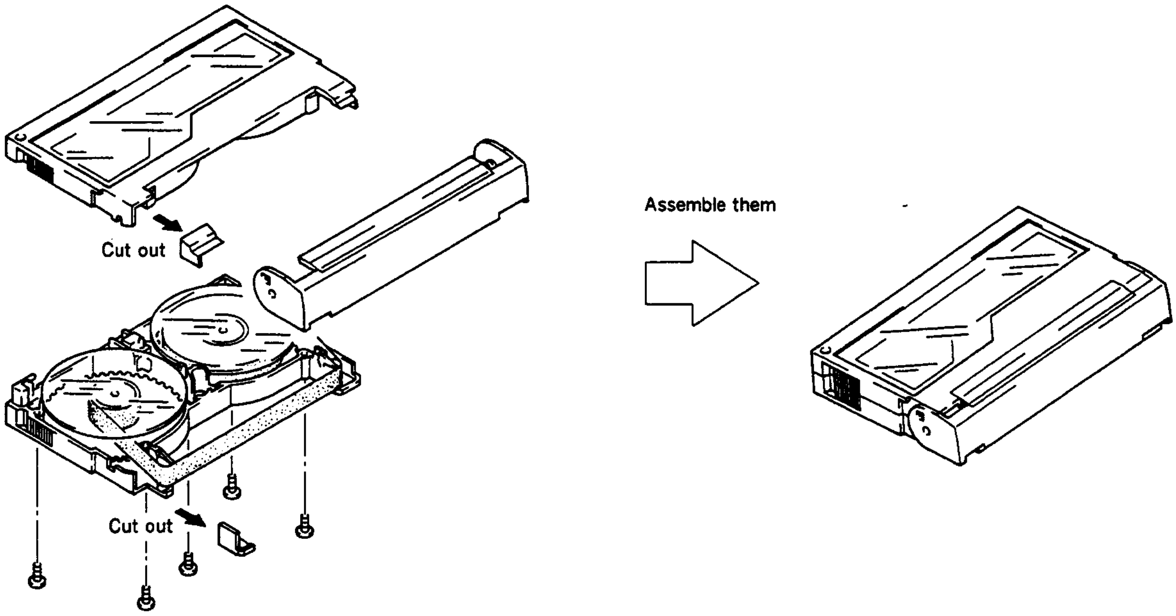
Fig. B

(7) Repeat steps (5) and (6) untill the correct waveform can be obtain. At this time, check that the tracking waveform has not changed.

(8) If the tracking waveform has changed, perform the Entrance Side Tracking Fine Adjustment and perform step (5) again.

6-5. No. 7 GUIDE (TG-7) ADJUSTMENT

. The No. 7 Guide (TG-7) Height Adjustment Screw is away from the No. 7 (TG-7) Guide. Refer to Alignment Information. Therefore, modify a cassette tape (E5-90HME) as shown in the figure and it is possible to adjust the No. 7 Guide in the PLAY mode.


Cut out
Cut out
Assemble them

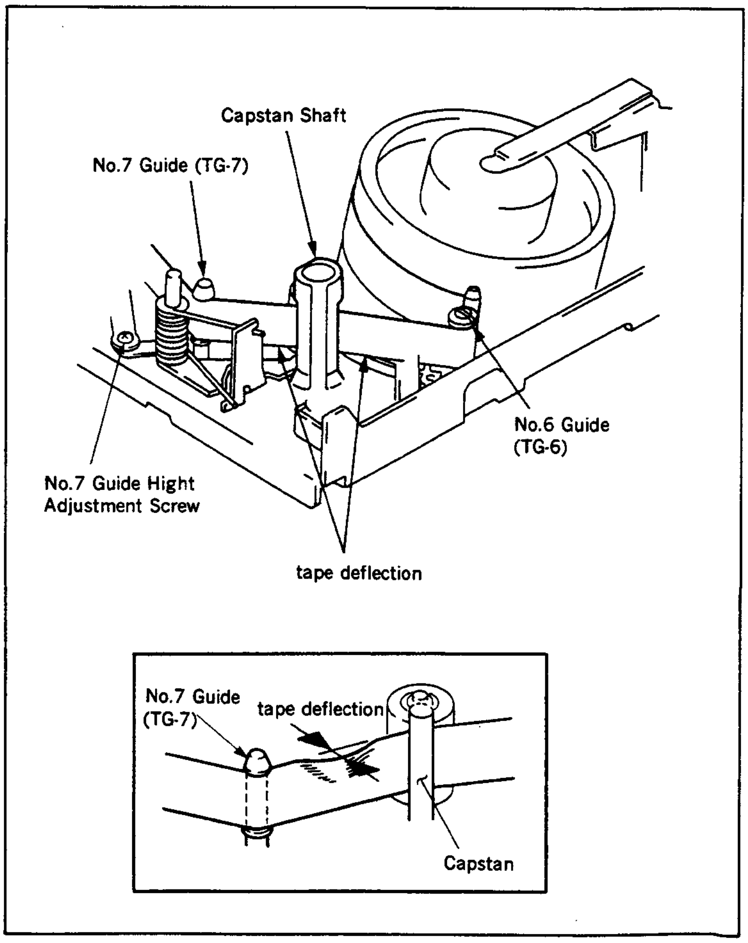
Tool: Modified cassette tape (E5-90HME)
Small adjustment mirror

Adjustment procedure:

(1) Play back the modified cassette tape which has been backed twenty minutes from tape end and put into the REV mode.

(2) Check that the tape deflection between the No. 6 Guide (TG-6) and Capstan Shaft is less than 0.5 mm. If it is more than 0.5 mm, turn and adjust the No. 7 Guide (TG-7) Height Adjustment Screw.

(3) Play back the modified cassette tape again and check that the tape deflection between the No. 7 Guide (TG-7) and Capstan Shaft is less than 0.5 mm. If it is more than the 0.5 mm, turn and adjust the No. 7 Guide (TG-7) Height Adjustment Screw. When putting into the REV mode, check that the tape deflection between the No. 6 Guide (TG-6) and Capstan Shaft is less than 0.5 mm.


Capstan Shaft
No.7 Guide (TG-7)
No.6 Guide (TG-6)
No.7 Guide Hight Adjustment Screw
tape deflection
No.7 Guide (TG-7)
tape deflection
Capstan

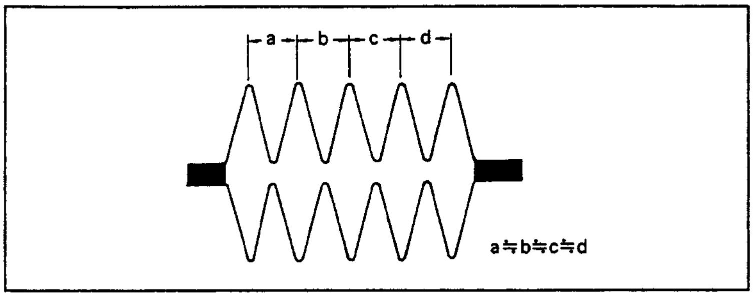
6-6. CHECK OF CUE AND REV WAVEFORMS

Tool: Oscilloscope
Alignment tape for tracking
(WR5-1CP)

Adjustment procedure:

(1) Play back the alignment tape and put into the REV mode. In this time, check that the pitches of the waveform are uniform more than five seconds as shown in the figure. If not, perform Section 6-3. Tracking Fine Adjustment and Section 6-5. No. 7 Guide (TG-7) Adjustment.

(2) Put into the CUE mode. In this time, check that the pitches of the waveform are uniform more than five seconds as shown in the figure. If not, perform Section 6-3. Tracking Fine Adjsutment.



6-7. CHECK AFTER ADJUSTMENT

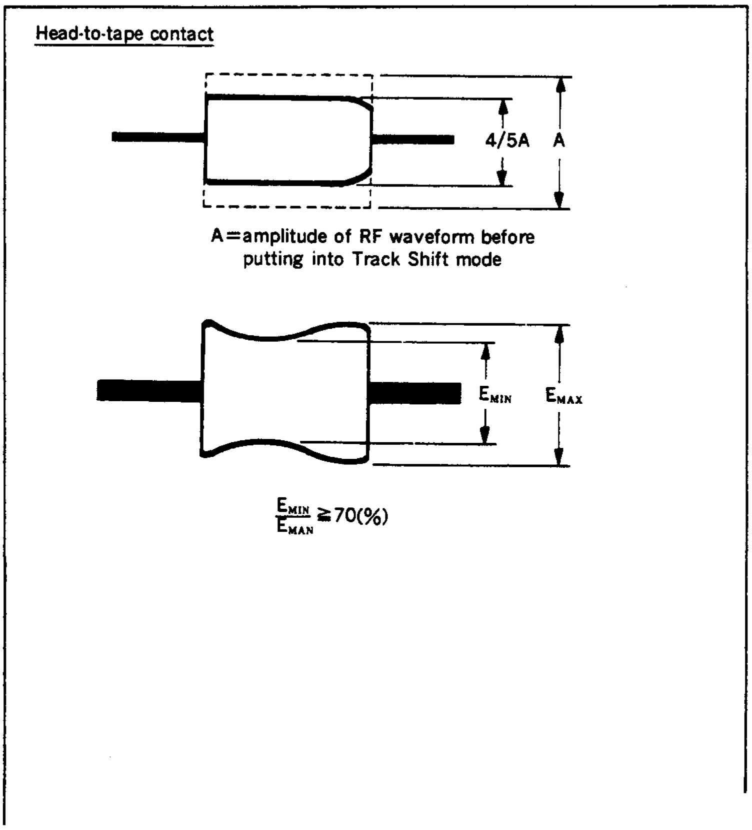
Tool: Oscilloscope
Alignment tape for tracking
(WR5-1CP)

6-7-1. Tracking Check

(1) When putting into the Track Shift mode, check that the amplitude of the RF waveform is about four-fifth as shown in the figure.

(2) In this time, check that amplitude minimum value (E min) is more than 70% of maximum value (E max) as shown in the figure.

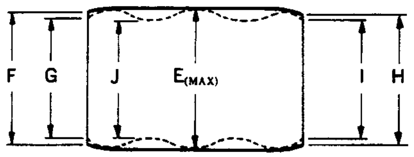
(3) Check that the fluctuation of the RF waveform is as shown in the figure.



A=amplitude of RF waveform before putting into Track Shift mode

$\frac{E_{MIN}}{E_{MAN}} \geqq 70(\%)$

Fluctuation

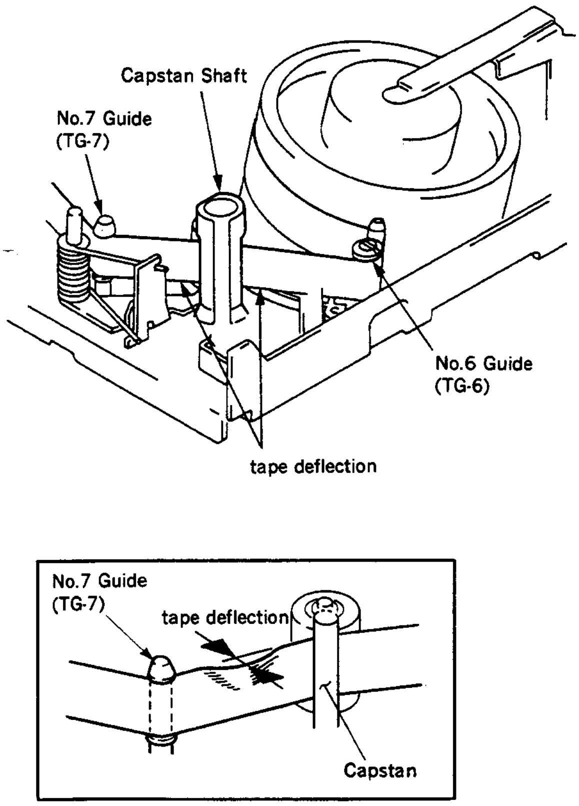


Fluctuation $\frac{G}{F} \geq 0.85$ $\frac{J}{E} \geq 0.85$ $\frac{I}{H} \geq 0.85$

6-7-2. Recovery Check of waveform

Tool: Oscilloscope
Alignment tape for tracking
(WR5-1CP)
Small adjustment mirror

(1) Play back the alignment tape.
(2) Put the Track Shift mode to OFF.
(3) Put into the EJECT mode and perform threading again.
(4) Put into the PLAY mode and check that the RF waveform recovers flatly within 2.5 seconds. Then check that there is no tape deflection around the Pinch Roller.
(5) Play back the alignment tape after putting into the CUE/REV or FF/REW mode. Check that the RF waveform recovers flatly within 2.5 seconds. Then check that there is no tape deflection around the Pinch Roller.
(6) Repeat steps (3) to (5).


Capstan Shaft
No.7 Guide
(TG-7)
No.6 Guide
(TG-6)
tape deflection
No.7 Guide
(TG-7)
tape deflection
Capstan

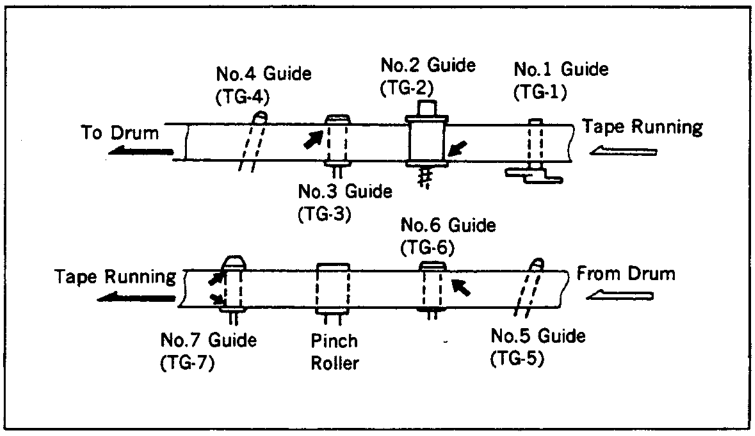
6-7-3. Tape Running Check

Tool: Cassette tape (E5-90HME)
Small adjustment mirror

(1) When playing back a cassette tape, check that the tape runs without space between tape and guide flange and tape curling (more than 0.3mm) do not exist at five positions.

Lower flange of No. 2 Guide
Upper flange of No. 3 Guide
Upper flange of No. 6 Guide
Lower and upper flanges of No. 7

(2) When putting into the CUE mode or REV mode, check that the tape runs without space between tape and guide flange and tape curling (more than 0.3 mm) do not exist at each flange of the guide.


No.4 Guide
(TG-4)
No.2 Guide
(TG-2)
No.1 Guide
(TG-1)
To Drum
Tape Running
No.3 Guide
(TG-3)
No.6 Guide
(TG-6)
Tape Running
From Drum
No.7 Guide
(TG-7)
Pinch
Roller
No.5 Guide
(TG-5)

6-8. SWITCHING POSITION ADJUSTMENT

Tool: Oscilloscope
Alignment tape for switching position adjustment (WR2-3CS)

Adjustment procedure:

(1) Connect the oscilloscope as follows.
CH-1: CN802 pin-4 on the RP-56P Board
CH-2: CN802 pin-2 on the RP-56P Board
Trigger: CH-2

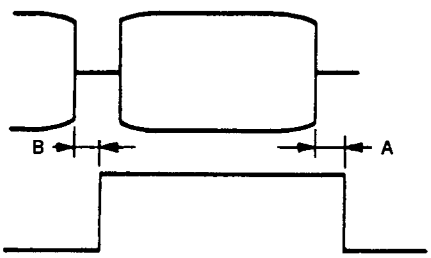
(2) Connect TP1 on the SY-153P to ground with a shorting clip.

(3) Play back the alignment tape.

(4) Adjust RV002 on the SS-43P to meet specification A.

(5) Check that it meets specification B within specification A.

(6) After adjustment, disconnect a shorting clip.



Spec:
A=0±3μsec
B=0±5μsec

SECTION 7
POWER SUPPLY AND SYSTEM CONTROL ALIGNMENT

[Equipment Required]
- 3-CCD Color Video Camera (DXC-325P)
- Variable voltage power supply
- Oscilloscope
- Digital voltmeter
- Frequency counter
- Shorting clip
- Blank tape (P5-60MP or equivalent)

7-1. POWER SUPPLY ALIGNMENT

When repairing or replacing DC-DC converter, be sure to perform the adjustment as follows.

7-1-1. DC-DC Converter Frequency Adjustment

Machine conditions for adjustment	Specifications	Adjustments
• DC IN 12V: 12.00V • EE mode	Q113-collector/PS-209(B-2) 308±2kHz	⊘ RV101/PS-209(A-2)

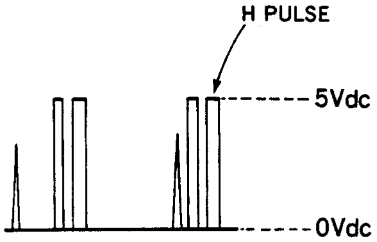
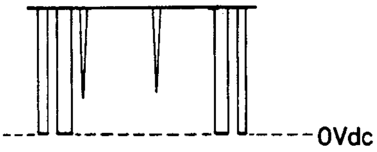
7-1-2. DC-DC Converter Voltage Adjustment

Machine conditions for adjustment	Specifications	Adjustments
• DC IN 12V: 12.00V • EE mode	+5V adjustment CN7-3/PS-209(D-3) +5.00±0.05V	⊘ RV111/PS-209(C-2)
	−5V adjustment CN7-7/PS-209(D-3) −5.00±0.05V	⊘ RV221/PS-209(D-1)
	+7V adjustment CN6-1/PS-209(C-1) +7.00±0.05V	⊘ RV241/PS-209(C-2)

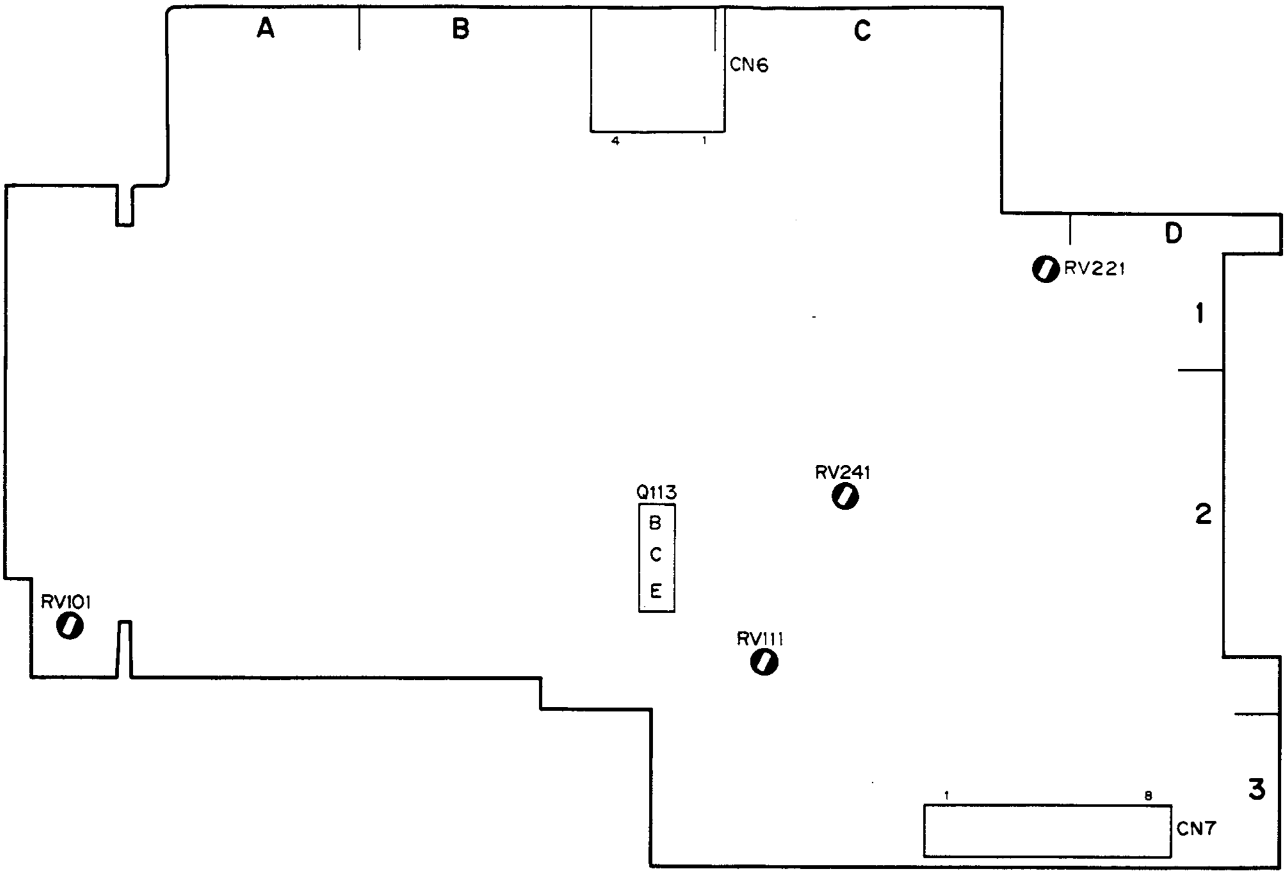
7-2. SYSTEM CONTROL ALIGNMENT

Note : When perform this alignment, assemble VTR and a camera (DXC-325P, 3-CCD color video camera).

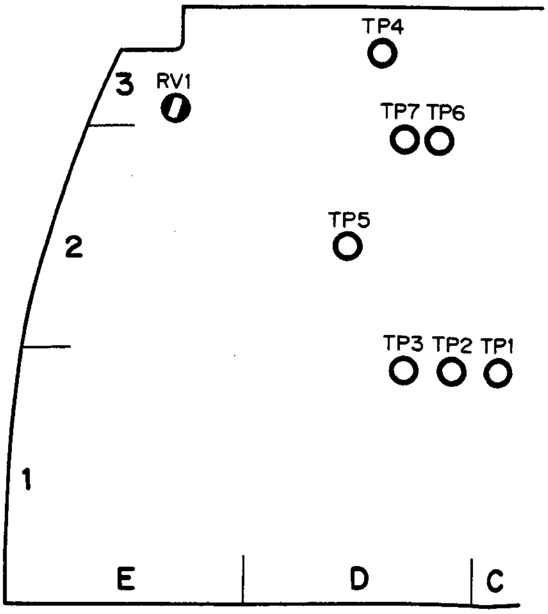
7-2-1. Battery End Adjustment

Machine conditions for adjustment	Specifications	Adjustments
• METER SELECT swith: BATT (SIDE PANEL) • Connect TP2 on the SY-153P Board (D-2) to GND with a shorting clip. • POWER switch: ON • Insert a P5-60MP cassette tape. • REC mode • After adjustmet, remove the shorting clip.	⊕: TP4/SY-153P (D-3) ⊖: TP5/SY-153P (D-2) 10.990±0.005Vdc	EXT DC Voltage
	TP6/SY-153P(D-2) OK  H pulse sometimes generates NG 	● RV1/SY-153P(E-3)

Locations of CNs, RVs and Q on the PS-209 Board A Side (Component Side).


A
B
C
CN6
4
1
D
RV221
1
RV241
Q113
B
C
E
2
RV101
RV111
3
1
8
CN7

Locations of RV and TPs on the SY-153P Board A side (Component Side).


TP4
3
RV1
TP7
TP6
TP5
2
TP3
TP2
TP1
1
E
D
C

SECTION 8
SERVO SYSTEM ALIGNMENT

[Equipment Required]

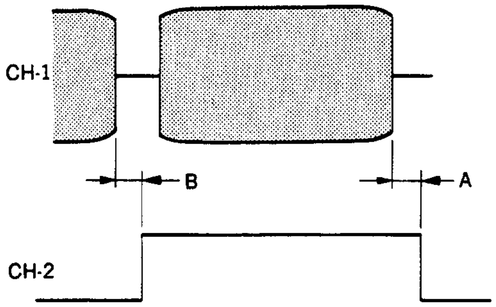
- 3-CCD Color Video Camera (DXC-325P)
- Oscilloscope
- Frequency counter
- Shorting clip
- Blank tape (P5-60MP or equivalent)
- Alignment tape

Name (Part No.)	REC mode	Tape Type	Tape Speed	Contents	
				Video Area	PCM Area
Switching position WR2-3CS (8-967-992-17)	STD	MP	SP	CH-1 : 3MHz CH-2 : 3MHz Marker Width : 100±10μsec.	
SP operation check WR5-5CSP (8-967-995-47)	STD	MP	SP	VIDEO SIGNAL Color-bar 4min. Monoscope 4min. AUDIO SIGNAL(AFM) 400Hz 60%mod.	AUDIO SIGNAL (PCM) Monoscope Section 20Hz 20sec. 400Hz 20sec. 14kHz 20sec. Color-Bar Section 1kHz 4min.

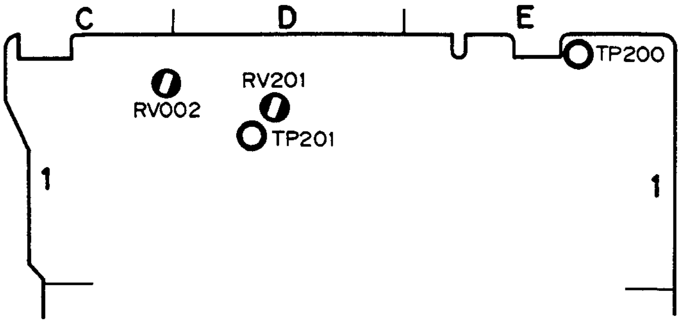
8-1. PWM OSCILLATION FREQUENCY ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-5CSP.	TP201/SS-43P(D-1) 480±2kHz	⓿ RV201/SS-43P(D-1)

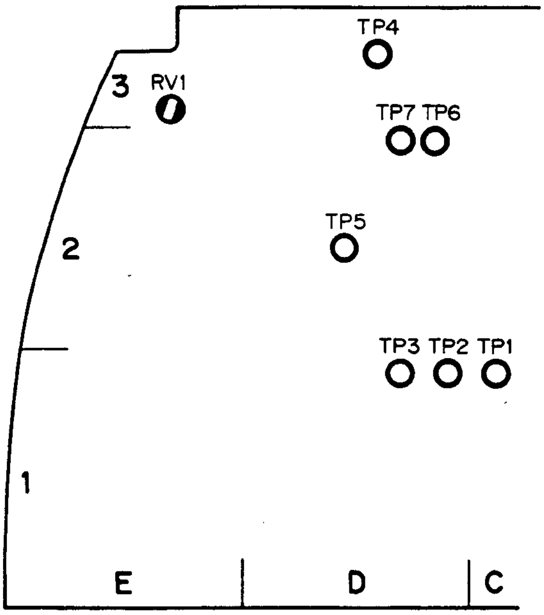
8-2. SWITCHING POSITION ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Connect TP1 on the SY-153P Board (C-1) to GND with a shorting clip. • Play back the alignment tape WR2-3CS. • After adjustment, remove the shorting clip.	CH-1 : CN802-4/RP-56P(A-2) CH-2 : CN802-2/RP-56P(A-2)  A=0±3μsec B=0±5μsec	⓿ RV002/SS-43P(C-1)

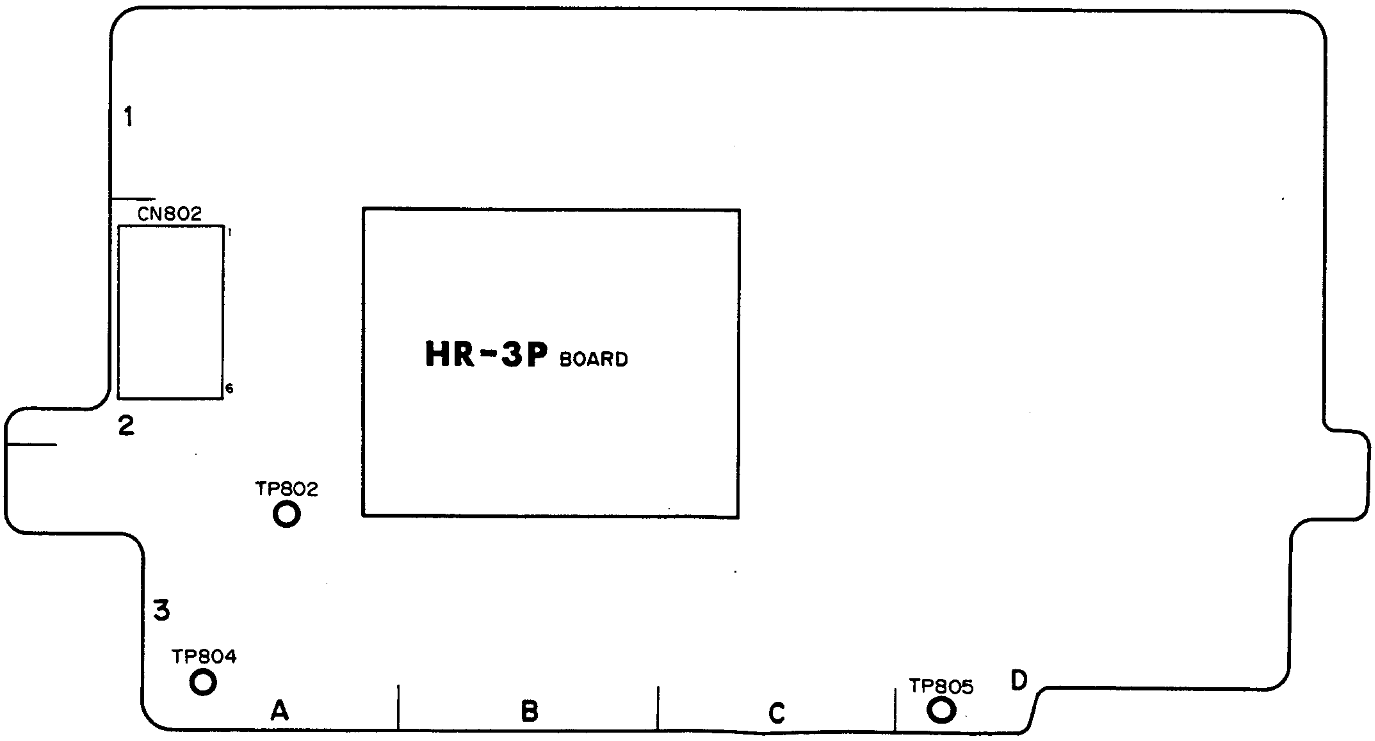
Locations of RVs and TPs on the SS-43P Board A Side (Component Side).


C
D
E
TP200
RV002
RV201
TP201
1
1

Locations of RV and TPs on the SY-153P Board A Side (Component side).


TP4
3
RV1
TP7 TP6
TP5
2
TP3 TP2 TP1
1
E
D
C

Locations of CN and TPs on the RP-56P Board A Side (Component Side).


1
CN802
1
6
HR-3P BOARD
2
TP802
3
TP804
A
B
C
TP805
D

SECTION 9
AUDIO SYSTEM ALIGNMENT

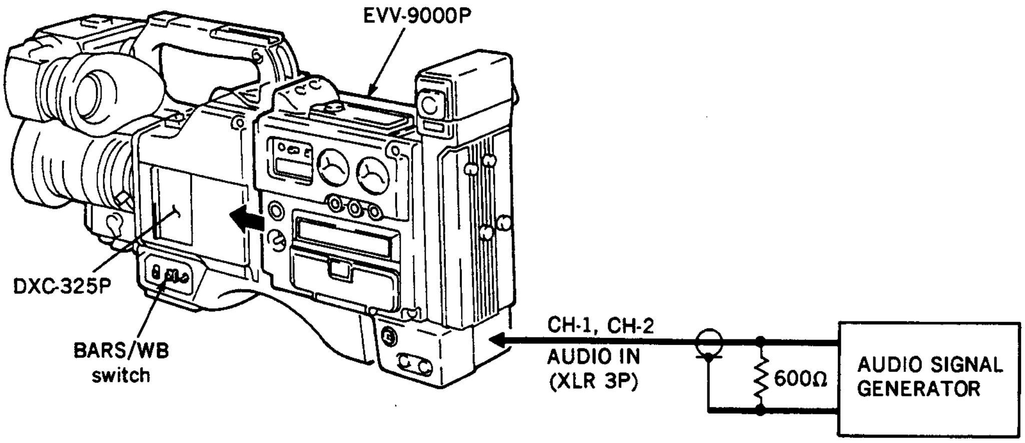
[Equipment Required]
- 3-CCD Color Video Camera (DXC-325P)
- Oscilloscope
- Frequency counter
- Audio signal generator
- Audio level meter
- Variable voltage power supply
- Shorting clips
- Blank tape (E5-60HME or equivalent)
- Alignment tape

Name (Part No.)	REC mode	Tape Type	Tape Speed	Contents	
				Video Area	PCM Area
SP operation check WR5-8CSE (8-967-995-48)	Hi8	ME	SP	VIDEO SIGNAL Color-bar 4min. Monoscope 4min. AUDIO SIGNAL (AFM) 400Hz 60%mod.	AUDIO SIGNAL (PCM) 400Hz 20min.
SP operation check WR5-5CSP (8-967-995-47)	STD	MP	SP	VIDEO SIGNAL Color-bar 4min. Monoscope 4min. AUDIO SIGNAL (AFM) 400Hz 60% mod.	AUDIO SIGNAL (PCM) Monoscope Section 20Hz 20sec. 400Hz 20sec. 14kHz 20sec. Color-Bar Section 1kHz 4min.

9-1. CONNECTION AND SWITCH SETTING

[Connection]

Note : EVV-9000P does not enter the REC mode without REF. SYNC input from the 50p connector.
Connect as shown in the figure.



[SWITCH SETTING]
EVV-9000P
- CONNECTOR BOX
  CH-1 MIC/LINE ······················MIC
  CH-2 MIC/LINE ······················MIC

- SIDE PANEL
  AFM INPUT SELECT················AUDIO CH-1
  AUDIO SELECT PCM1 ·········AUTO
  PCM2 ·········AUTO
  AFM ·············AUTO
  MONITOR SELECT···················PCM, MIX

- Do not touch these switches without particular indication.

9-2. PCM1 AGC ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• AUDIO IN: 400Hz/−60dBu • AFM INPUT SELECT switch : CAMERA MIC • EE mode	TP3/FP-37(C-2) −10±0.2dBu	⊘ RV4/FP-37(B-1)

Note : 0dBu=0.775Vrms

9-3. AFM EE LEVEL ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• AUDIO IN: 400Hz/−60dBu • EE mode	TP101/AU-136P(B-3) −10±0.2dBu	⊘ RV101/AU-136P(A-4)

9-4. MONITOR OUT LEVEL ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• AUDIO IN: 400Hz/−60dBu • MONITOR SELECT switch : PCM, PCM1 • EE mode	AUDIO OUT connector (terminated with 47kΩ) −10±0.2dBu	⊘ RV201/FP-37(C-4)

9-5. PCM MASTER CLOCK ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Connect TP302/AU-136P(E-4) and TP309/AU-136P(D-5) with shorting clip. • EE mode • After adjustment, remove the shorting clip.	TP303/AU-136P(E-3) 11.45±0.01MHz	⊘ RV301/AU-136P(E-3)

9-6. PCM PLAYBACK VCO FREE-FREQUENCY ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Connect TP304/AU-136P(D-5) and TP309/AU-136P(D-5) with a shorting clip. • Connect TP305/AU-136P(E-4) and TP309/AU-136P(D-5) with a shorting clip. • Play back the Audio 400Hz portion of the alignment tape WR5-5CSP. • After adjustment, remove the shorting clips.	TP306/AU-136P(D-3) 11.50±0.05MHz	⊘ RV302/AU-136P(D-4)

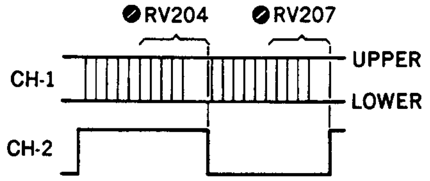
9-7. D/A CONVERTER LEVEL ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Play back the Audio 400Hz portion of the alignment tape WR5-5CSP.	TP203/AU-136P(B-4) −10±0.2dBu	⊘ RV206/AU-136P(D-2) **Note:** If there is the level difference between the TP203 and TP204, adjust the RV206 to be on the center value.
	TP204/AU-136P(B-3) −10±0.2dBu	

9-8. NR DECODE LEVEL ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Play back the Audio 400Hz portion of the alignment tape WR5-5CSP.	TP201/AU-136P(A-2) −14.0±0.5dBu	⊘ RV203/AU-136P(B-2) **Note:** If there is the level difference between the TP201 and TP202, adjust the RV203 to be on the center value.
	TP202/AU-136P(A-2) −14.0±0.5dBu	

9-9. A/D CONVERTER OFFSET ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• AUDIO IN: 400Hz/−∞ • AFM INPUT SELECT switch : CAMERA MIC • AUDIO SELECT switch : PCM1/PCM2 MAN • REC mode • Turn the AUDIO LEVEL PCM1/PCM2 control VRs fully counter-clockwise direction.	CH-1: TP308/AU-136P(D-1) CH-2: TP307/AU-136P(D-2)  Adjust upper and lower brightnesses to be the same.	PCM1 ⊘ RV204/AU-136P(D-3) PCM2 ⊘ RV207/AU-136P(C-4)

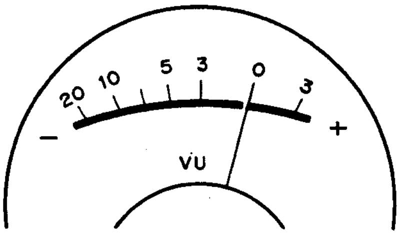
9-10. PCM EE LEVEL ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• AUDIO IN: 400Hz/−60dBu • EE mode	TP201/AU-136P(A-2): PCM1 TP202/AU-136P(A-2): PCM2 −18±0.2dBu	PCM1 ⊘ RV201/AU-136P(A-3) PCM2 ⊘ RV202/AU-136P(A-3)

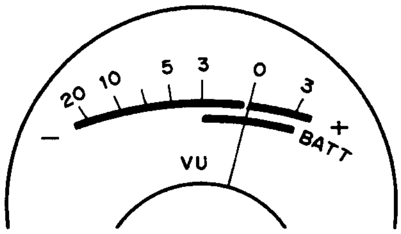
9-11. PCM REC LEVEL ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• AUDIO IN: 400Hz/−60dBu • Preform the self-recording/play back with a E5-60HME.	TP201/AU-136P(A-2): PCM1 TP202/AU-136P(A-2): PCM2 −14±0.5dBu	PCM1 ⊘ RV205/AU-136P(D-3) PCM2 ⊘ RV208/AU-136P(D-3)

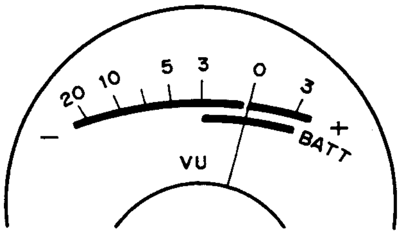
9-12. PCM1 METER ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• AUDIO IN: 400Hz/−60dBu • AFM INPUT SELECT switch : CAMERA MIC • METER SELECT switch : PCM1 • EE mode	PCM1 level meter  The pointer should stay at 0.	⊘ RV204/FP-37(C-1)

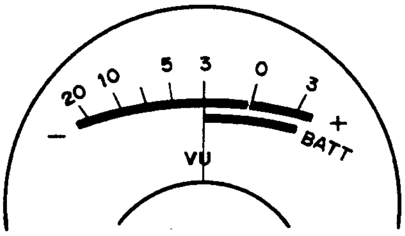
9-13. PCM2 METER ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• AUDIO IN: 400Hz/−60dBu • METER SELECT switch : PCM2 • EE mode	PCM2/AFM/BATT level meter  The pointer should stay at 0.	⊘ RV206/FP-37(A-1)

9-14. AFM METER ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• AUDIO IN: 400Hz/−60dBu • METER SELECT switch : AFM • EE mode	PCM2/AFM/BATT level meter  The pointer should stay at 0.	⊘ RV205/FP-37(B-1)

9-15. BATTERY METER ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• METER SELECT switch: BATT (SIDE PANEL) • Connect TP2 on the SY-153P board (D-2) and GND with a shorting clip. • POWER switch: ON • Insert a P5-60MP cassette tape. • REC mode • After adjustment, remove a shorting clip.	WARNING lamp WARNING lamp blinks → lights up	Variable voltage power supply
	PCM2/AFM/BATT level meter  Adjust the RV207 so that the pointer stays on the left side of the green belt. (within a pointer width)	❶ RV207/FP-37(D-4)

9-16. ALARM TONE OUT LEVEL CHECK

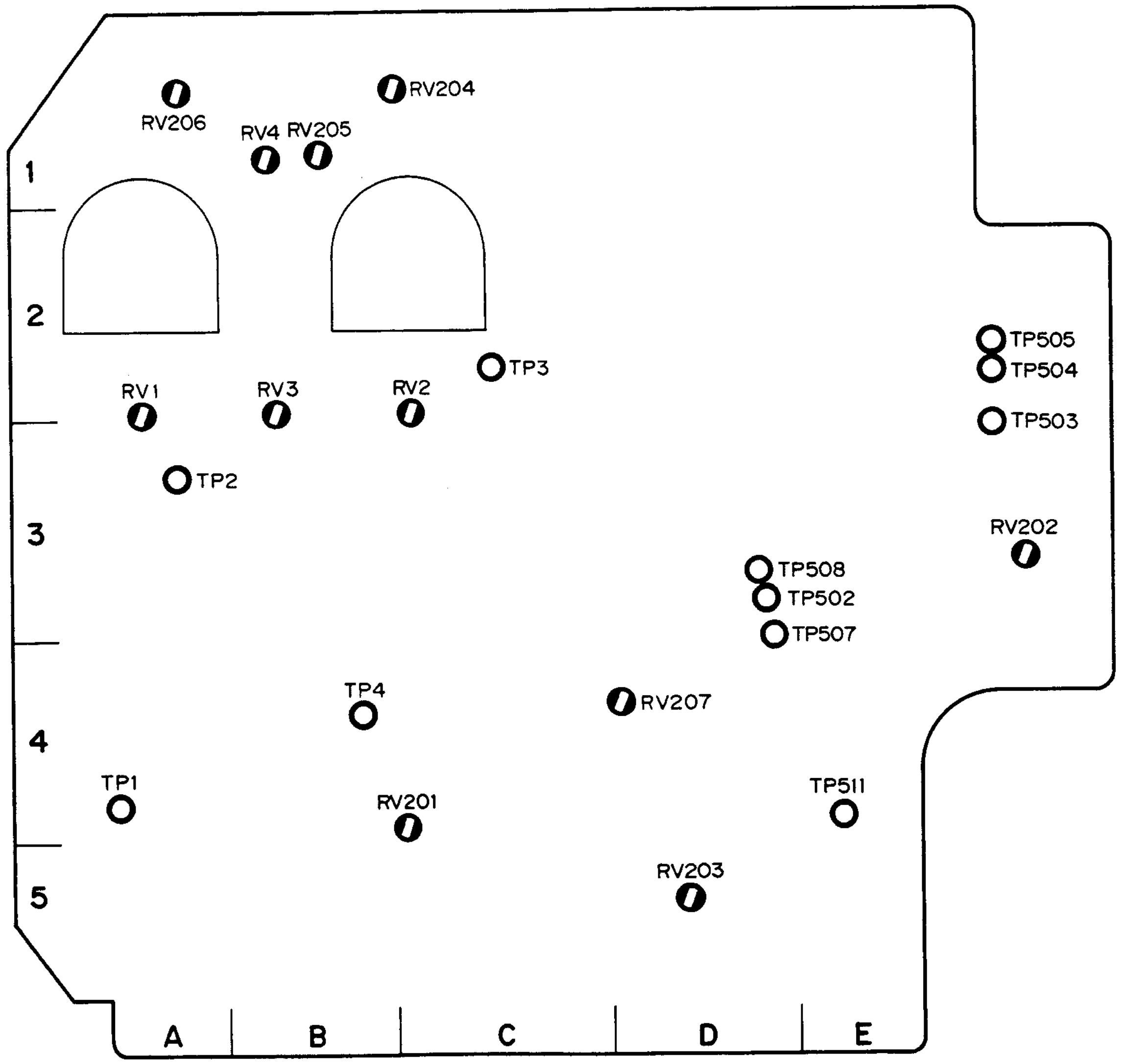
Machine conditions for adjustment	Specifications	Adjustments
• Connect TP6/SY-153P(D-2) and GND with a shorting clip. • Turn the ALARM VR fully clockwise direction. • After adjustment, remove a shorting clip.	EARPHONE jack/EVV-9000P (terminated with 8Ω) −32±3dBu	

9-17. EARPHONE OUT LEVEL CHECK

Machine conditions for adjustment	Specifications	Adjustments
• Play back the Audio 400Hz portion of the alignment tape WR5-8CSE. • Turn the MONITOR VR fully clockwise direction.	EARPHONE jack/EVV-9000P (terminated with 8Ω) −18.0±3dBu	

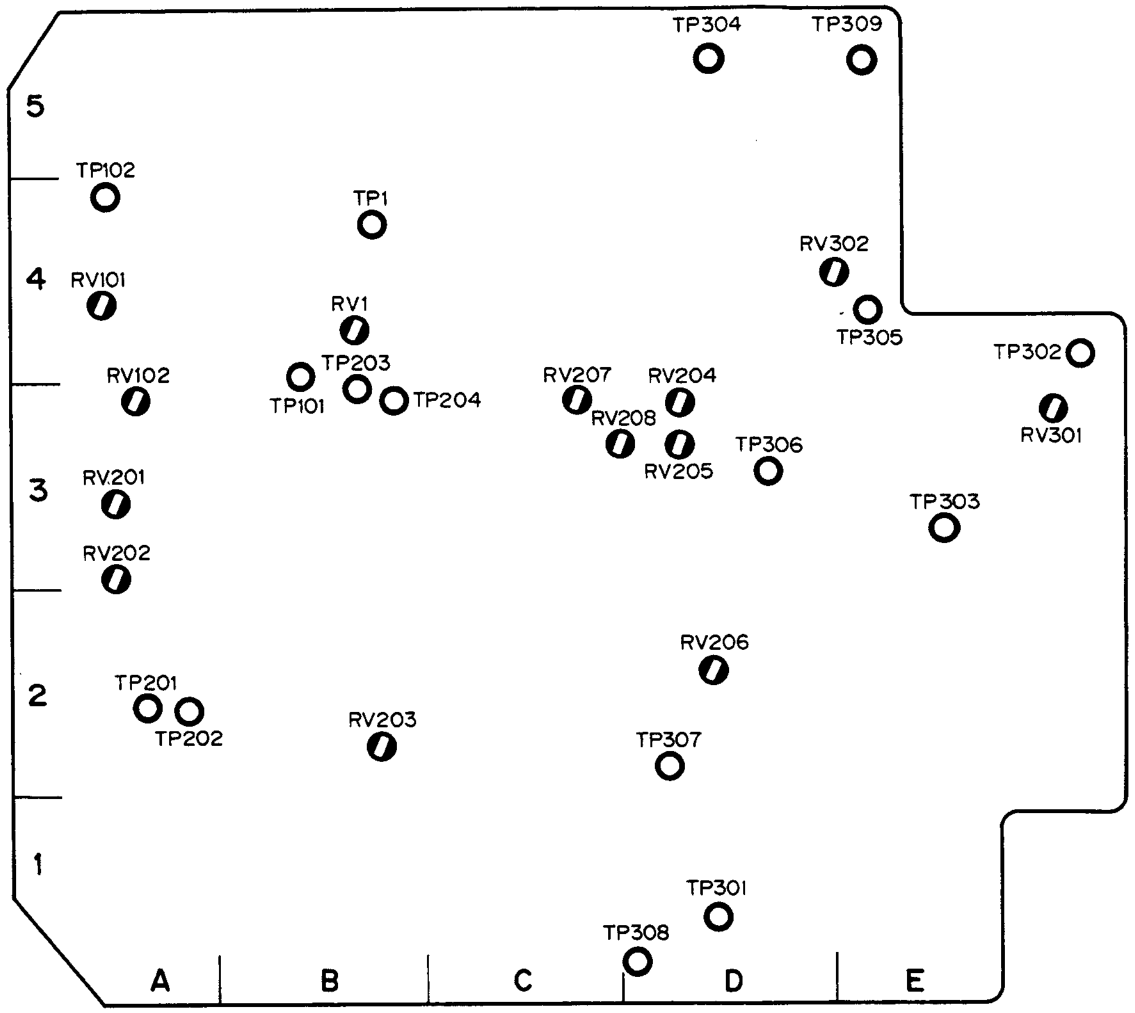
Locations of RVs and TPs on the FP-37 Board

- B side (Soldering Side).


RV206
RV4
RV205
RV204
1
2
RV1
RV3
RV2
TP3
TP505
TP504
TP503
TP2
3
RV202
TP508
TP502
TP507
TP4
RV207
4
TP1
RV201
TP511
RV203
5
A
B
C
D
E

Locations of RVs and TPs on the AU-136P Board

- A side (Component Side).


TP304
TP309
5
TP102
TP1
RV302
4
RV101
RV1
TP305
TP302
RV102
TP203
TP101
TP204
RV207
RV204
RV208
RV205
TP306
RV301
3
RV201
TP303
RV202
RV206
2
TP201
TP202
RV203
TP307
1
TP301
TP308
A
B
C
D
E

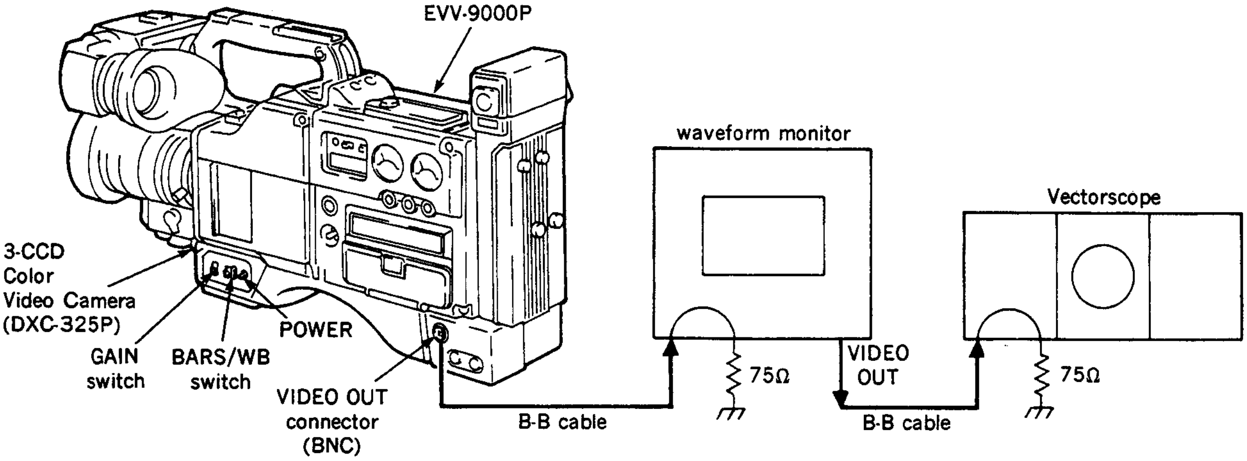
SECTION 10
VIDEO SYSTEM ALIGNMENT

[Equipment Required]

- 3-CCD Color Video Camera (DXC-325P)
- Oscilloscope
- Frequency counter
- Waveform monitor (WFM)
- Vectorscope
- Blank tapes (P5-60MP and E5-60HME or equivalent)
- Shorting clip
- Alignment tape

Name (Part No.)	REC mode	Tape Type	Tape Speed	Contents	
				Video Area	PCM Area
Video freq. resp. WR5-7CE (8-967-995-18)	Hi8	ME	SP	RF Sweep 0 to 15MHz Marker : 2.0MHz 4.5MHz 7.0MHz 8.5MHz 10.0MHz	
SP operation check WR5-5CSP (8-967-995-47)	STD	MP	SP	VIDEO SIGNAL Color-bar 4min. Monoscope 4min. AUDIO SIGNAL 400Hz 60% mod.	AUDIO SIGNAL (PCM) Monoscope Section 20Hz 20sec. 400Hz 20sec. 14kHz 20sec. Color-bar Section 1kHz 4min.
SP operation check WR5-8CSE (8-967-995-48)	Hi8	ME	SP		AUDIO SIGNAL (PCM) 400Hz 20min.

10-1. CONNECTION


EVV-9000P
waveform monitor
Vectorscope
3-CCD
Color
Video Camera
(DXC-325P)
POWER
GAIN
switch
BARS/WB
switch
VIDEO OUT
connector
(BNC)
B-B cable
75Ω
VIDEO
OUT
B-B cable
75Ω

10-2. INITIAL SETTING AND ADJUSTMENT

- Initial Setting

Set the switches of the camera as follows.

GAIN switch : 0dB

BARS/WB switch : BARS

Note : Do not touch these switches without particular indication.

- Initial Adjustment

Note 1 : Before adjustment, connect the equipments referring to Section 10-1. CONNECTION. Check that it meets the following specifications.

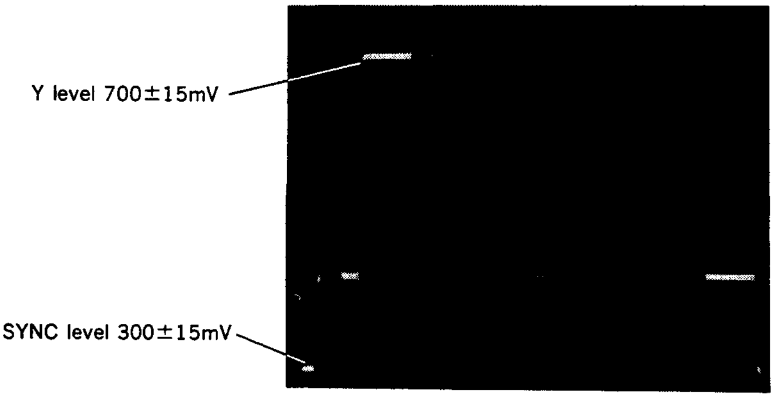
Note 2 : Befor adjustment, turn the POWER ON and warm up the unit about 10minutes.

10-2-1. Color Bar Signal

Equipments : Vectorscope and Waveform monitor

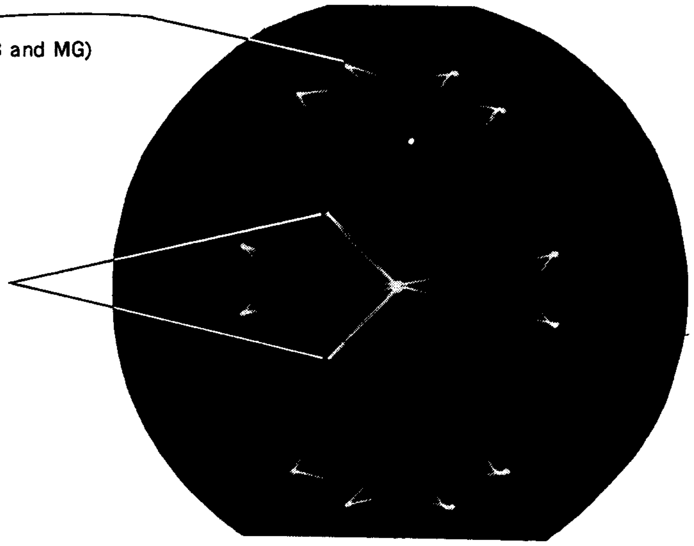
Preparation : Set the BARS WB switch on the side of the camera to BARS.

Specifications :


Y level 700±15mV
SYNC level 300±15mV

Note : Partial difference between scale and signal level is caused by photographic error.

Chroma Level

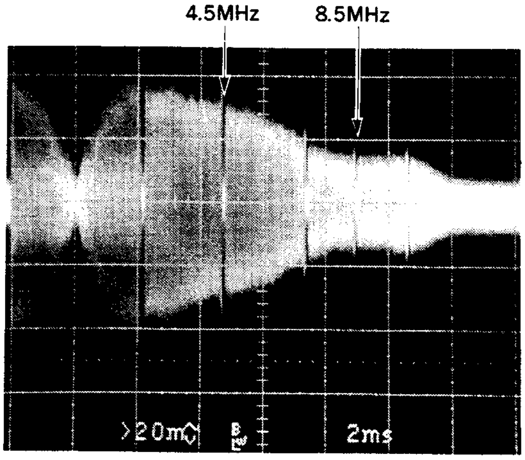


- Adjust the beam spots of each color (R, YL, G, CY, B and MG) to be inside the "⊞" mark.

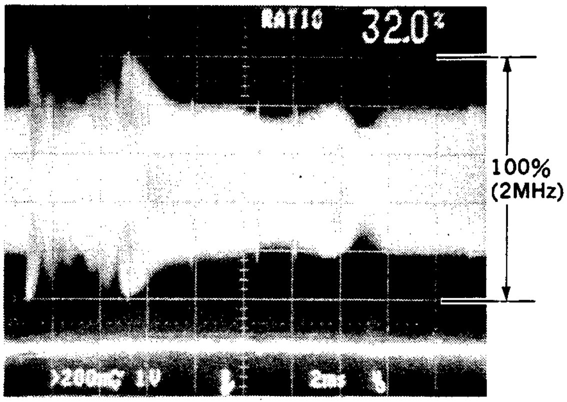
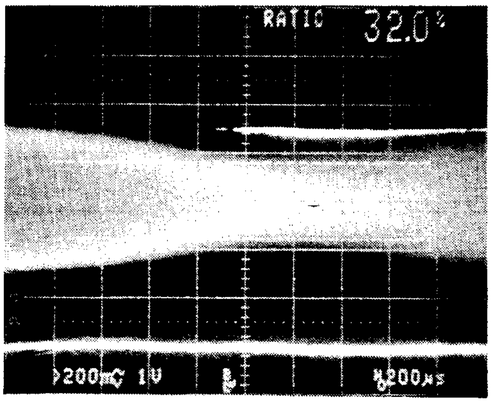
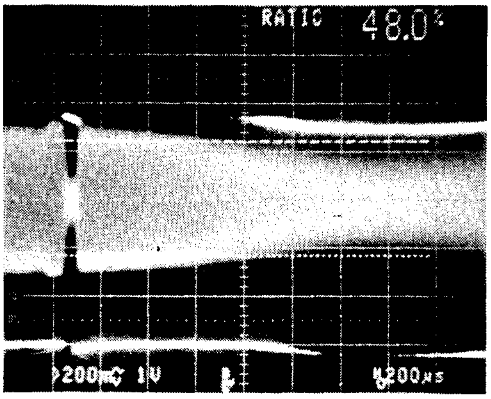
Burst Spot 75%

Note : When it does not meet the specifications, perform the ENCODER SYSTEM (PR-111 and ES-1 Boards) ADJUSTMENT referring to Section 3-4 of the Camera (DXC-325P).

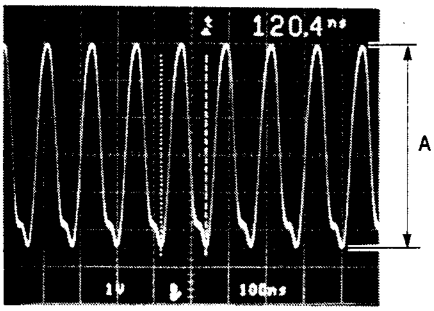
10-3. PB FREQUENCY RESPONSE ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Play back the alignment tape WR5-7CE.	CH-1 : CN802-3/RP-56P(A-2)  4.5MHz : 8.5MHz=2 : $1^{+0.1}_{-0}$	⊘ RV802/RP-56P(B-2) Trigger: CN802-2/RP-56P(A-2)
	CH-2 : CN802-4/RP-56P(A-2) 4.5MHz : 8.5MHz=2 : $1^{+0.1}_{-0}$	⊘ RV803/RP-56P(B-2) Trigger: CN802-2/RP-56P(A-2)

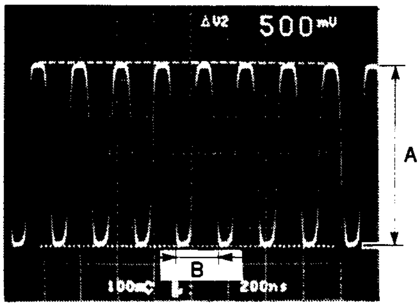
10-4. DOC SENSITIVITY ADJUSTMENT

Machine conditions for adjustment	**Specifications**	**Adjustments**
• Play back the alignment tape WR5-7CE. • MAX of CH-1 (2MHz) should be 100%.	CH-1 : TP806/RP-56P(D-1) CH-2 : CN803-2/RP-56P(D-3)  RATIO 32.0% 100% (2MHz) >200mC 1V 2ms ⬇  RATIO 32.0% >200mC 1V 200µs Pulse of CH-2 is rising up at 32±2% against 100%.	⊘ RV807/RP-56P(B-1) A SIDE
	CH-1 : TP806/RP-56P(D-1) CH-2 : TP807/RP-56P(D-1)  RATIO 48.0% >200mC 1V 200µs Check that pulse of CH-2 is rising up at 48±5% against 100%.	

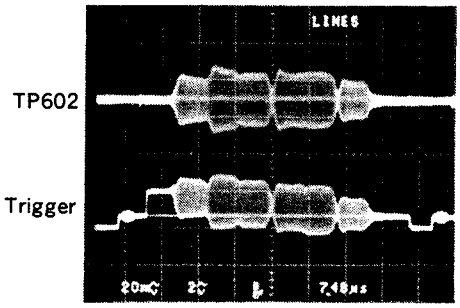
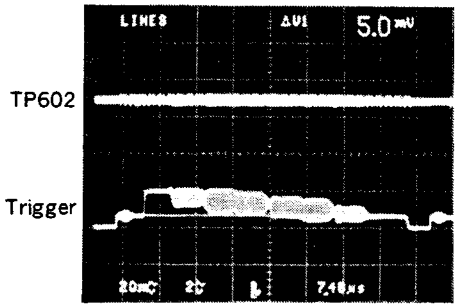
10-5. FLYING ERASE CONFIRMATION

Machine conditions for adjustment	Specifications	Adjustments
• Insert a P5-60MP tape. • REC mode	TP804/RP-56P(A-3)  A≧6.0V t=7.5±1MHz	

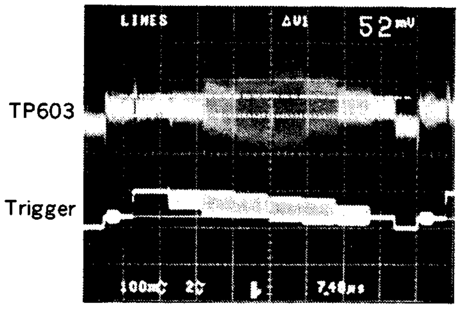
10-6. X'tal OSCILLATOR fo ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8CSE.	TP601/VO-33P(A-4)  A=0.5±0.1V B=4433619±30Hz	⊘ CV601/VO-33P(B-3)

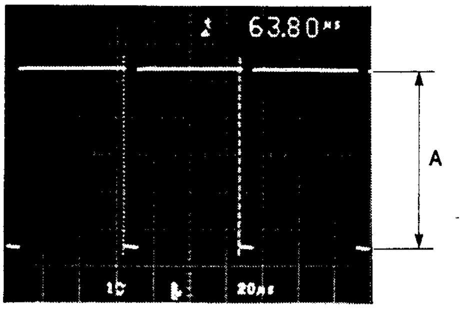
10-7. PB C COMB FILTER ADJUSTMENT (1)

Machine conditions for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8CSE.	TP602/VO-33P(E-2)  ⬇  Minimize residual chroma component (10mV or less)	⊘ RV002/HD-8P ⊘ LV601/VO-33P(C-1) • Alternately adjust Trigger: VIDEO OUT connector /EVV-9000P

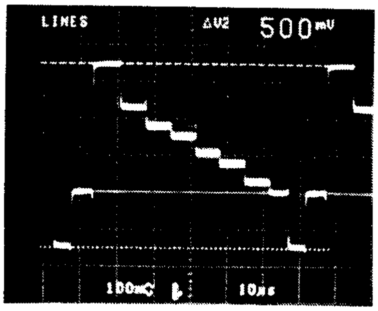
10-8. Y COMB FILTER ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Insert a E5-60HME tape. • EE mode	TP603/VO-33P(D-3)  minimum (0±200mV)	⊘ RV001/HD-8P Trigger: VIDEO OUT connector /EVV-9000P

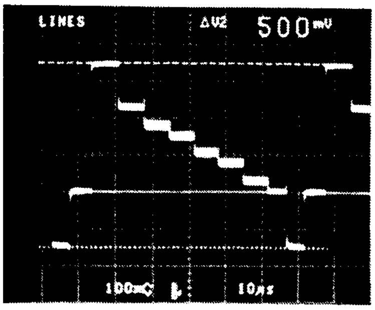
10-9. CHARACTER GENERATOR fo ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Insert a E5-60HME tape. • EE mode	IC407-20/VO-32P(B-3)  A (reference value)=5.0±0.5V t=15675±50Hz	⊘ CV401/VO-32P(A-4)

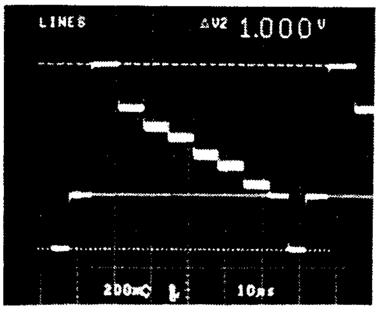
10-10. SYNC AGC ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Insert a E5-60HME tape. • EE mode	TP401/VO-32P(D-1)  0.50±0.02V	⊘ RV409/VO-32P(E-1)

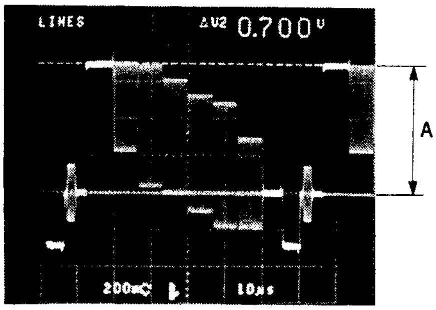
10-11. LOOP GAIN ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Insert a E5-60HME tape. • EE mode	Pin 30 of HD-8P Board  0.50±0.02V	⊘ RV401/VO-32P(A-1)

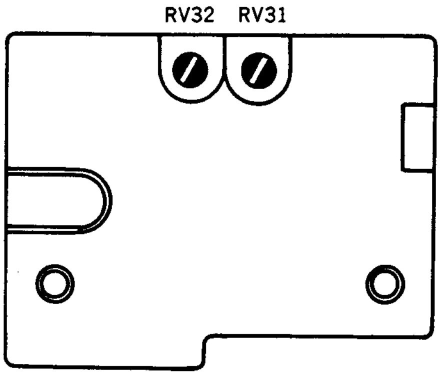
10-12. VIDEO OUT LEVEL ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Insert a E5-60HME tape. • EE mode	TP407/VO-32P(A-4)  1.00±0.04V	⊘ RV410/VO-32P(E-1)

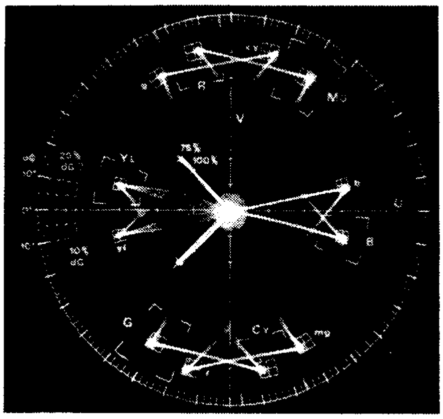
10-13. EE MODE VIDEO OUT Y LEVEL ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Insert a E5-60HME tape. • EE mode	VIDEO OUT connector (terminated with 75Ω)  A=0.70±0.015V	⊘ RV32/VA-102P

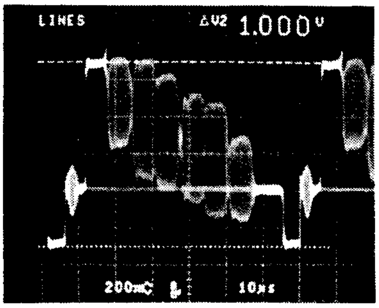
Bottom View of the Connector Box (VA-102P Board)



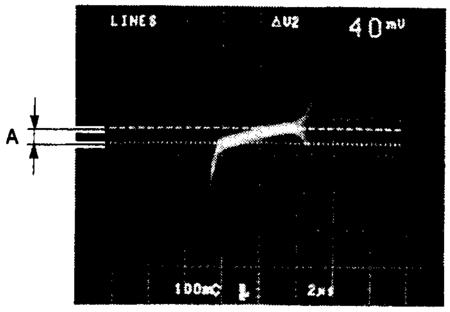
10-14. EE MODE VIDEO OUT CHROMA LEVEL ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Insert a E5-60HME tape. • EE mode	VIDEO OUT connector (terminated with 75Ω)  Spec. 1 : Adjust PHASE so that the burst beam spot should be the 75% spot. Spec. 2 : Adjust RV31 so that the yellow (Y_L) beam spot should be in the mark "⊞" on the vectorscope.	Spec. 1 ⊘ PHASE knob /vectorscope Spec. 2 ⊘ RV31/VA-102P

10-15. LOW BAND MODE PB Y LEVEL ADJUSTMENT

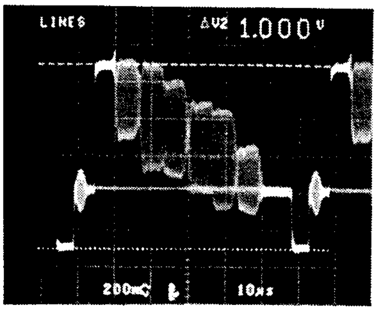
Machine conditions for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-5CSP.	VIDEO OUT connector (terminated with 75Ω)  1.00±0.025V	⊘ RV416/VO-32P(E-2)

10-16. PB EMPHASIS ADJUSTMENT

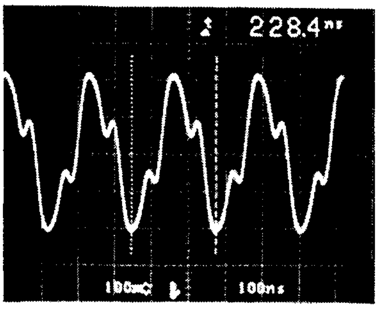
Machine conditions for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-5CSP.	VIDEO OUT connector (terminated with 75Ω)  A≦20mV (Read it at the center of waveform.)	⊘ RV408/VO-32P(D-1)

10-17. Hi8 MODE PB Y LEVEL ADJUSTMENT

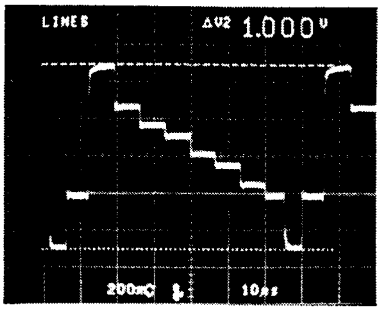
Note : This adjustment should be performed after completion of Section 10-15. LOW BAND MODE PB Y LEVEL ADJUSTMENT.

Machine conditions for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8CSE.	VIDEO OUT connector (terminated with 75Ω)  1.00±0.025V	⊘ RV417/VO-32P(E-2)

10-18. LOW BAND MODE Y FM CARRIER ADJUSTMENT

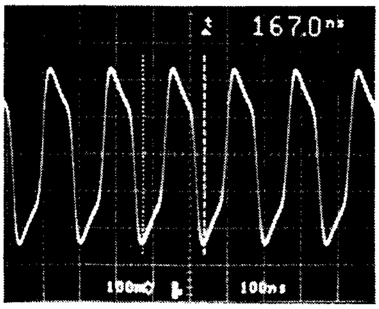
Machine conditions for adjustment	Specifications	Adjustments
• Turn the POWER OFF the 3-CCD Color Video Camera (DXC-325P). • Insert a P5-60MP tape. • EE mode • After adjustment, turn the POWER ON of the Camera.	TP404/VO-32P(E-4)  4.38±0.02MHz	⊘ RV406/VO-32P(C-1)

10-19. LOW BAND MODE Y FM DEVIATION ADJUSTMENT

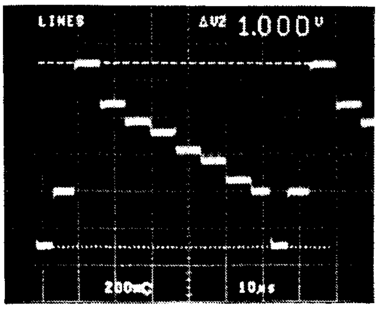
Machine conditions for adjustment	Specifications	Adjustments
• Perform the self-recording/play back with a P5-60MP tape.	TP407/VO-32P(A-4)  1.00±0.025V	⊘ RV405/VO-32P(C-1)

Note : After adjustment, perform Section 10-18. LOW BAND MODE Y FM CARRIER ADJUSTMENT.

10-20. Hi8 MODE Y FM CARRIER ADJUSTMENT

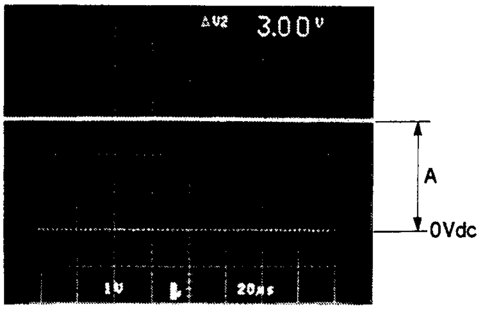
Machine conditions for adjustment	Specifications	Adjustments
• Turn the POWER OFF of the 3-CCD Color Video Camera (DXC-325P). • Insert a E5-60HME tape. • EE mode • After adjustment, turn the POWER ON of the Camera.	TP404/VO-32P(E-4)  5.99±0.02MHz	⊘ RV407/VO-32P(C-2)

10-21. Hi8 MODE Y FM DEVIATION ADJUSTMENT

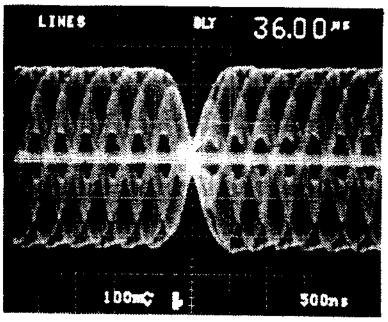
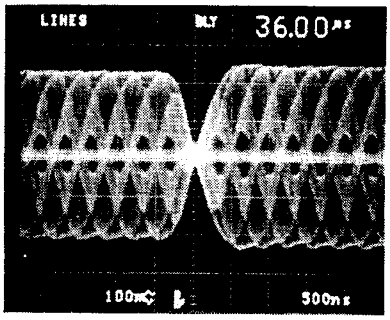
Machine conditions for adjustment	Specifications	Adjustments
• Perform the self-recording/play back with a E5-60HME tape.	TP407/VO-32P(A-4)  1.00±0.025V	⊘ RV404/VO-32P(C-1)

Note : After adjustment, perform Section 10-20. Hi8 MODE Y FM CARRIER ADJUSTMENT

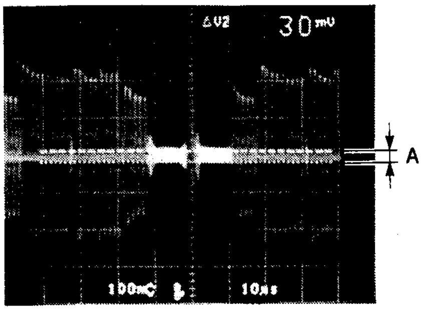
10-22. 375f_H VCO ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Insert a E5-60HME tape. • EE mode	TP604/VO-33P(B-4)  A=3.0±0.1Vdc	⊘ RV602/VO-33P(B-3)

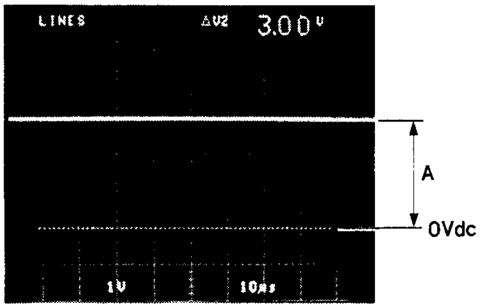
10-23. CHROMA EMPHASIS ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Insert a E5-60HME tape. • EE mode	TP605/VO-33P(B-2) NG  ⬇ OK  Level of cross point=minimum	⊘ FL603/VO-33P(A-2)

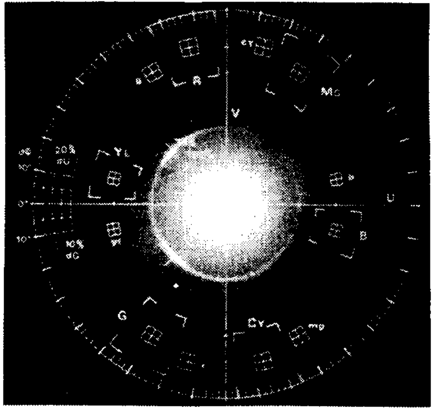
10-24. CARRIER BALANCE ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Insert a E5-60HME tape. • EE mode	TP605/VO-33P(B-2)  A (5.17MHz component)=minimum	⊘ RV601/VO-33P(B-2)

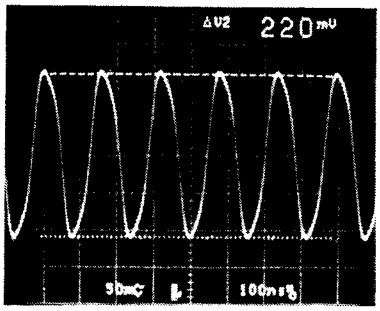
10-25. f_H VCO ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Insert a E5-60HME tape. • EE mode	TP606/VO-33P(A-1)  A=3.0±0.1Vdc	⊘ RV604/VO-33P(A-4)

10-26. GCA GAIN ADJUSTMENT

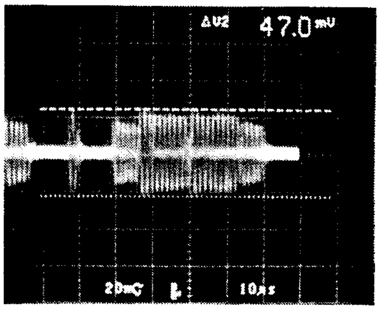
Machine conditions for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the aligument tape WR5-8CSE. • Search FWD or search REV mode.	VIDE OUT connector (terminated with 75Ω)  Adjst the external of the circle to burst level.	⊘ RV603/VO-33P(A-4)

10-27. REC Y REC CURRENT ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustments
• Setting of the DXC-325P BARS/WB switch: AUTO • Connect between these points on the AU-136P Board with shorting clips. TP1(B-4)↔ TP309/(D-5) TP102(A-4)↔ TP309(D-5) • Insert a E5-60HME tape. • REC mode • After adjustment, remove the shorting clips. • Setting of the DXC-325P after adjustment. BARS/WB switch: BARS	TP802/RP-56P (A-3)  220±10mV (Read it at the center of noise.)	⊘ RV806/RP-56P (D-2)

Note : After adjustment, perform the Section 10-28. REC C REC CURRENT ADJUSTMENT, Section 10-29. REC AFM REC CURRENT ADJUSTMENT and Section 10-30. REC ATF REC CURRENT ADJUSTMENT.

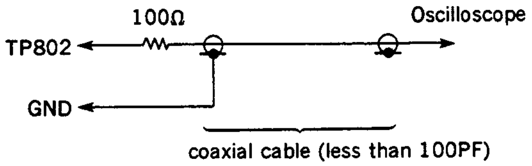
10-28. REC C REC CURRENT ADJUSTMENT

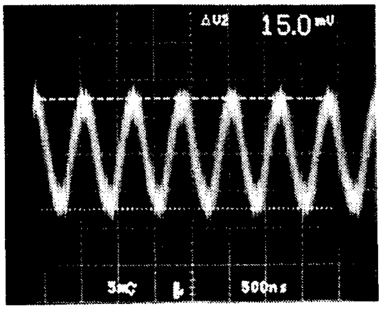
Machine conditions for adjustment	Specifications	Adjustments
• Connect between these points with shorting clips. AU-136P Board TP1(B-4)↔ TP309/(D-5) TP102(A-4)↔ TP309(D-5) RP-56P Board TP805(D-3)↔ CN804-8(D-3) • Insert a E5-60HME tape. • REC mode • After adjustment, remove the shorting clips.	TP802/RP-56P(A-3)  47±3mV	⊘ RV805/RP-56P(D-2)

Note : After adjustment, perform the Section 10-29. REC AFM REC CURRENT ADJUSTMENT and Section 10-30. REC ATF REC CURRENT ADJUSTMENT.

10-29. REC AFM REC CURRENT ADJUSTMENT

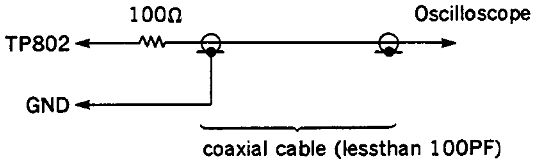
Note : Do not use the probe of 10 : 1 in this adjustment because the signal level of TP802 is low. Connect directly oscilloscope through 100 ohms resistor as shown in the figure.

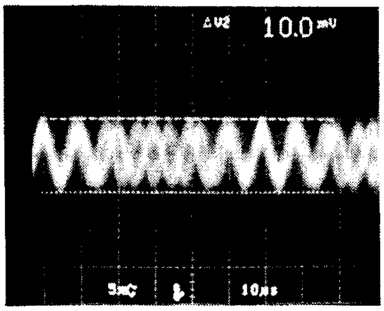


Machine conditions for adjustment	Specifications	Adjustments
• Setting of the DXC-325P BARS/WB switch: AUTO • Disconnect CN805(A-1) on the RP-56P Board. • Connect these points with shorting clips. AU-136P Board TP1(B-4)↔TP309(D-5) RP-56P Board TP805(D-3)↔CN804-8(D-3) • Insert a E5-60HME tape. • REC mode • After adjustment, remove the shorting clips and connect CN805(A-1) on the RP-56P Board. • Setting of the DXC-325P after adjustment. BARS/WB switch: BARS	TP802/RP-56P(A-3)  15.0±1.5mV (Read it at the center of waveform)	⊘ RV102/AU-136P(A-3)

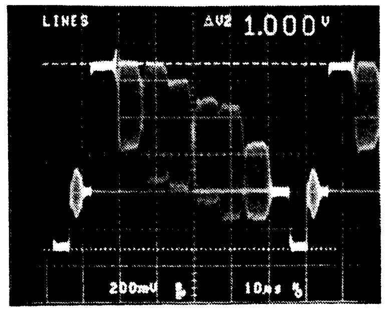
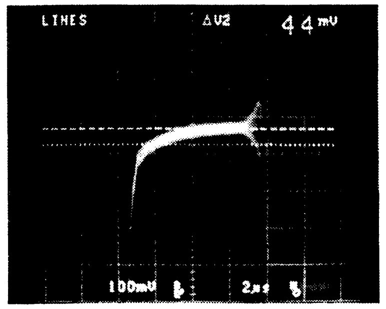
10-30. REC ATF REC CURRENT ADJUSTMENT

Note : Do not use the prove of 10 : 1 in this adjustment because the signal level of TP802 is low. Connect directly oscilloscope through 100 ohms resistor as shown in the figure.

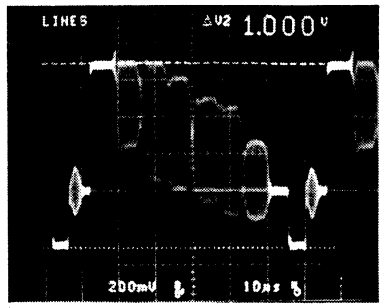


Machine conditions for adjustment	Specifications	Adjustments
• Setting of the DXC-325P BARS/WB switch: AUTO • Disconnect CN805(A-1) on the RP-56P Board. • Connect these points with shorting clips. AU-136P Board TP102(A-4)→ TP309(D-5) RP-56P Board TP805(D-3)→ CN804-8(D-3) • Insert a E5-60HME tape. • REC mode • After adjustment, remove the shorting clips and connect CN805(A-1) on the RP-56P Board. • Setting of the DXC-325P after adjustment. BARS/WB switch: BARS	TP802/RP-56P(A-3)  12.0±1.5mV	⊘ RV1/AU-136P(B-4)

10-31. LOW BAND MODE OA Y LEVEL ADJUSTMENT

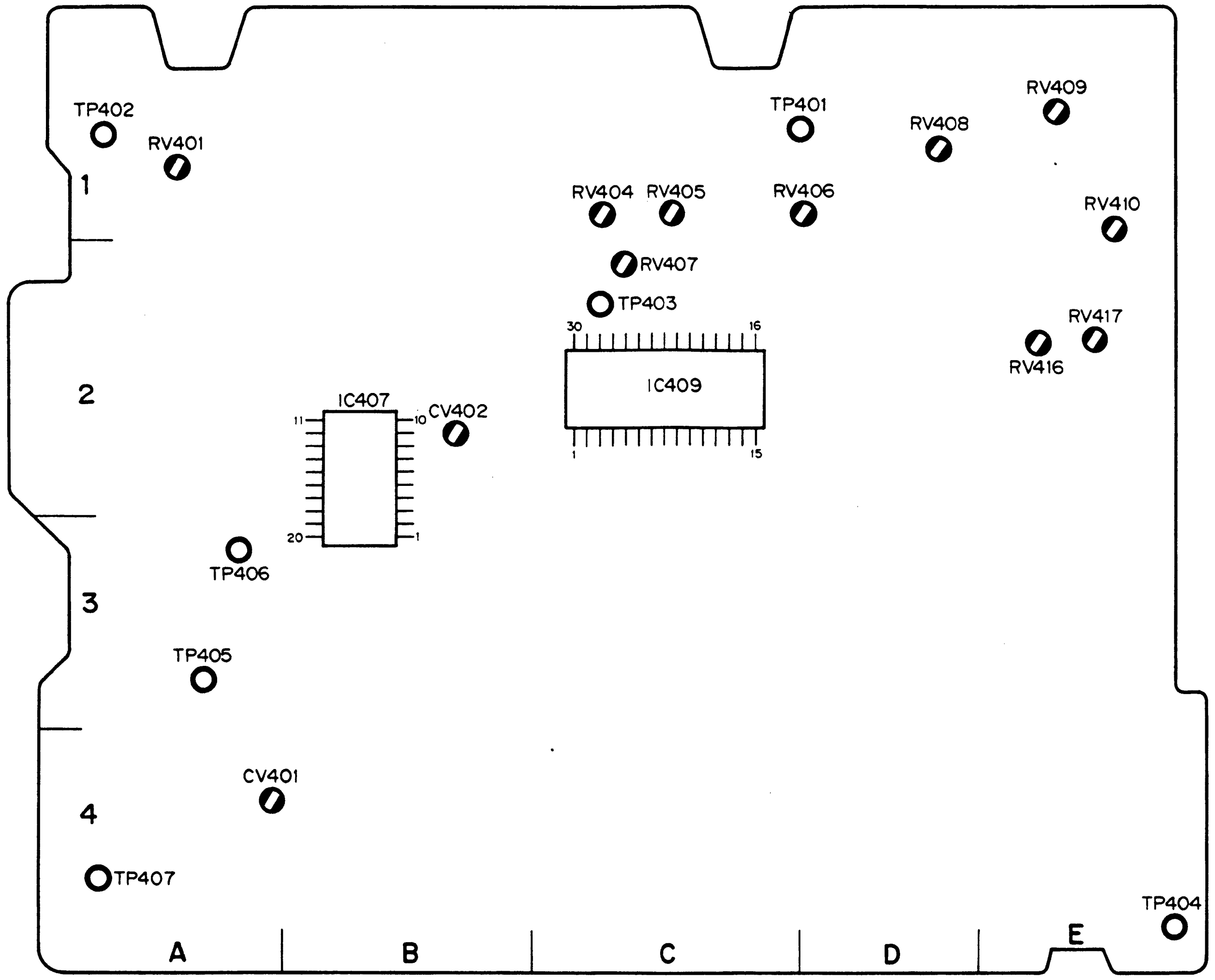
Machine conditions for adjustment	Specifications	Adjustments
• Perform the self-recording/play back with a P5-60MP tape.	STEP 1 : Y level adjust VIDEO OUT connector (terminated with 75Ω)  1.00±0.025V	⊘RV416/VO-32P(D-1)
	STEP 2 : emphasis adjust VIDEO OUT connector (terminated with 75Ω)  A≦20mV (Read it at the center of waveform)	⊘RV408/VO-32P(D-1)

10-32. Hi8 MODE OA Y LEVEL ADJUSTMENT

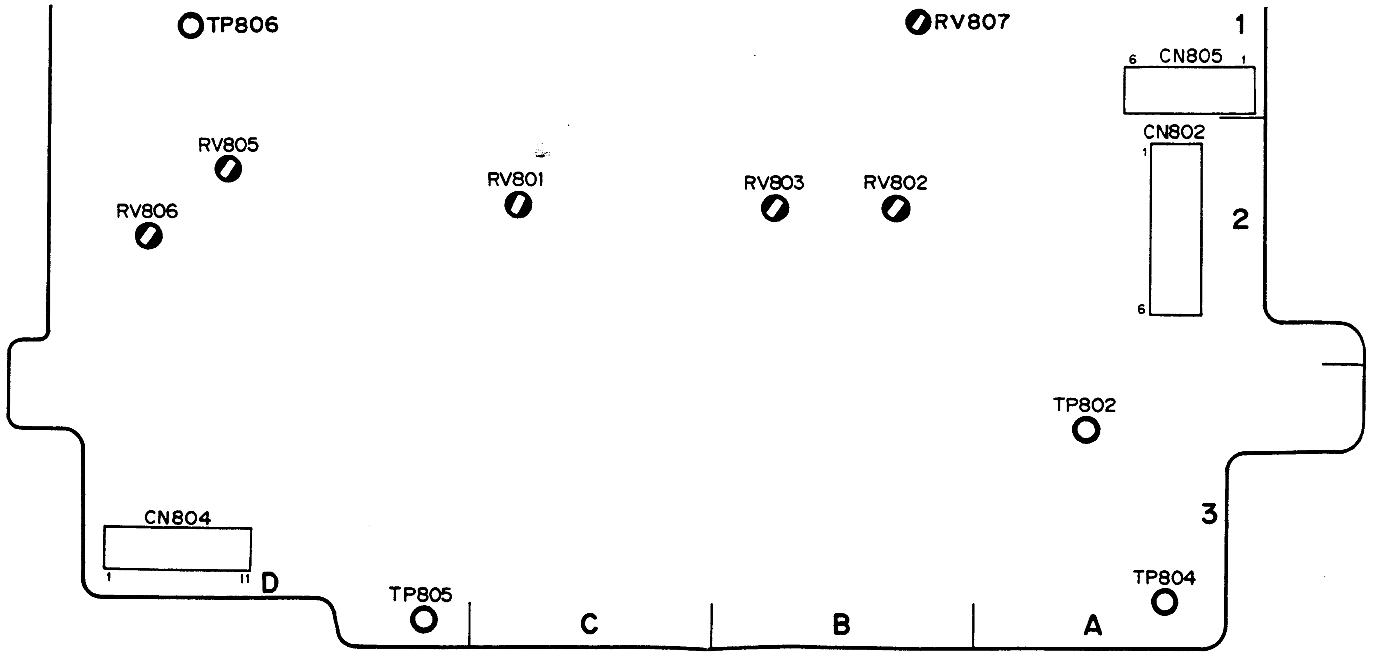
Machine conditions for adjustment	Specifications	Adjustments
• Perform the self-recording/play back with a E5-60HME tape.	VIDEO OUT connector (terminated with 75Ω)  1.00±0.025V	⊘RV417/VO-32P(E-2)

Locations of CVs, RVs and TPs on the VO-32P Board

• A side (soldering side)

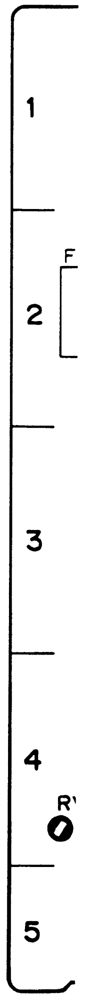

TP402
RV401
TP401
RV408
RV409
RV404
RV405
RV406
RV410
RV407
TP403
IC409
RV417
RV416
IC407
CV402
TP406
TP405
CV401
TP407
TP404
1
2
3
4
A
B
C
D
E

Locations of CN, RVs and TPs on the RP-56P Board


TP806
RV807
CN805
CN802
RV805
RV801
RV803
RV802
RV806
TP802
CN804
TP805
TP804
1
2
3
D
C
B
A

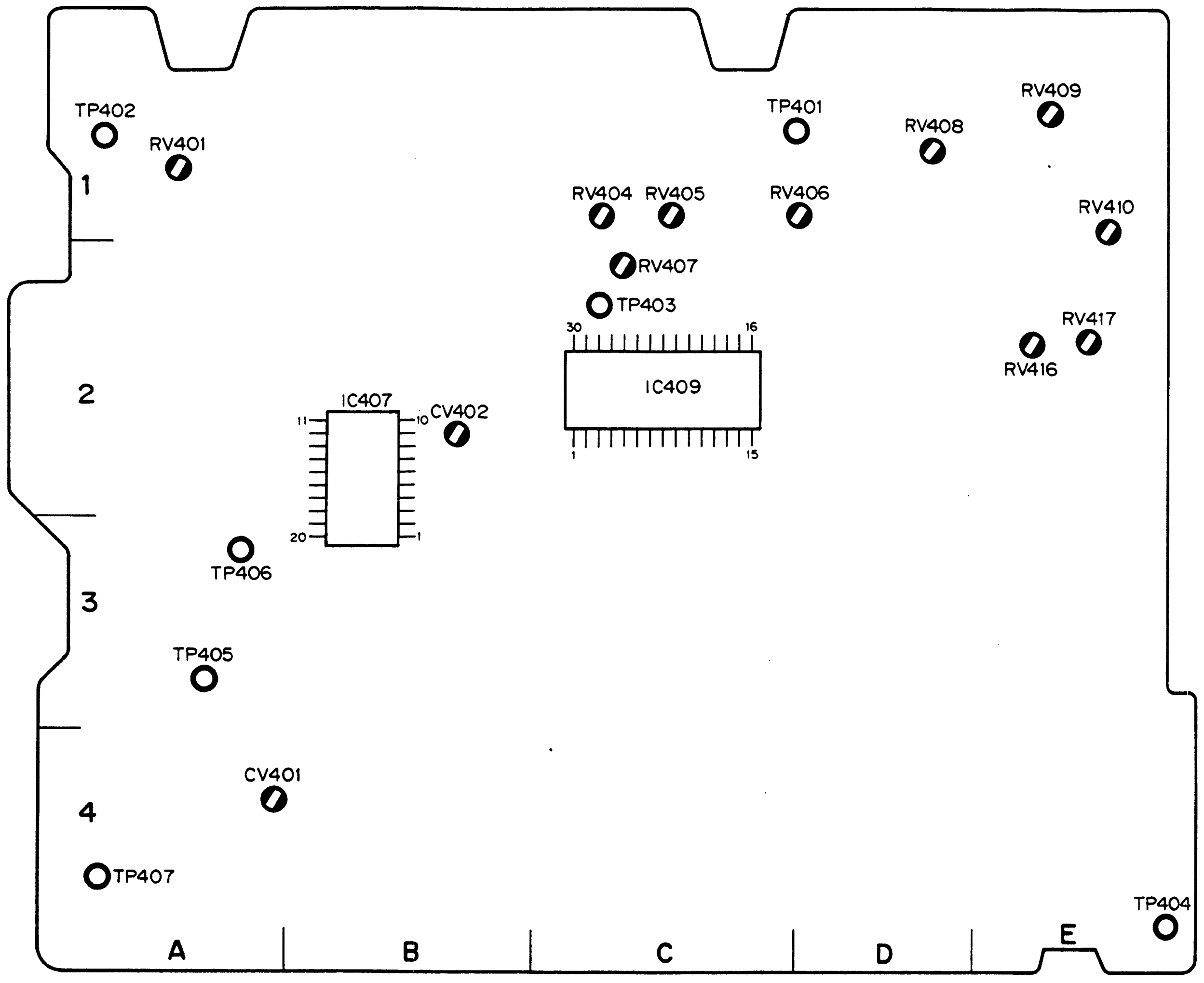
Locati

• A si

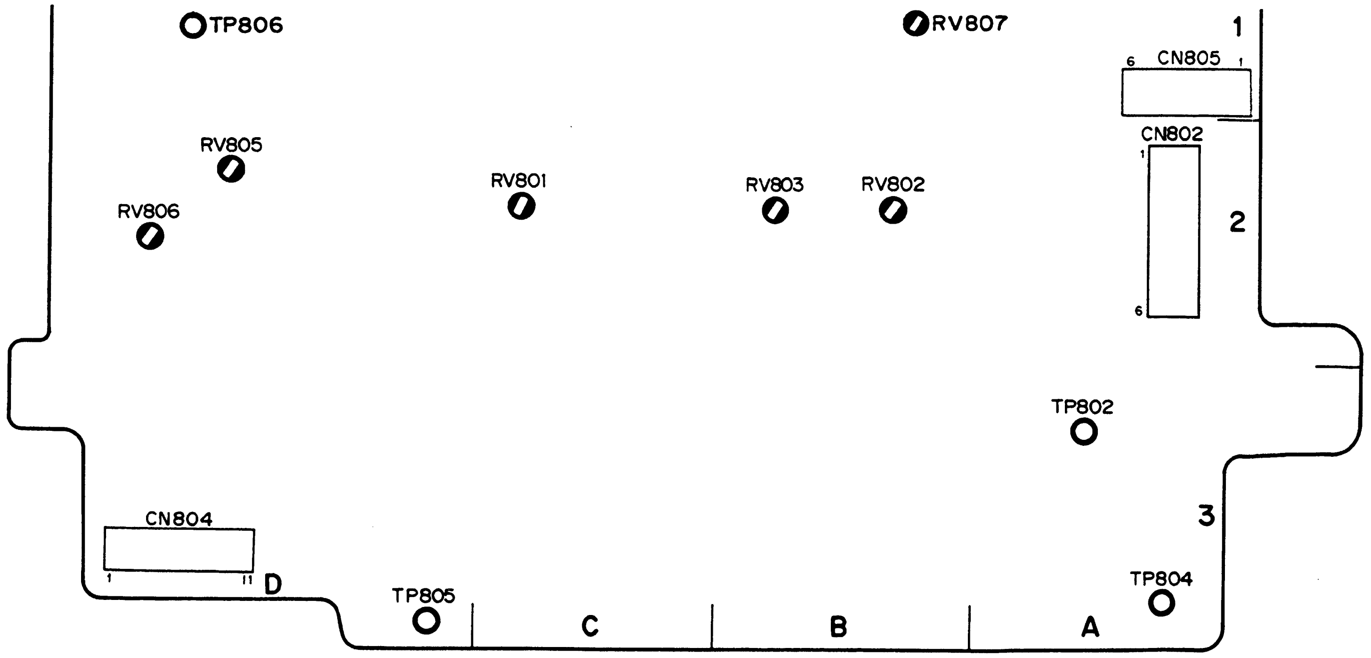


Locations of CVs, RVs and TPs on the VO-32P Board

- A side (soldering side)

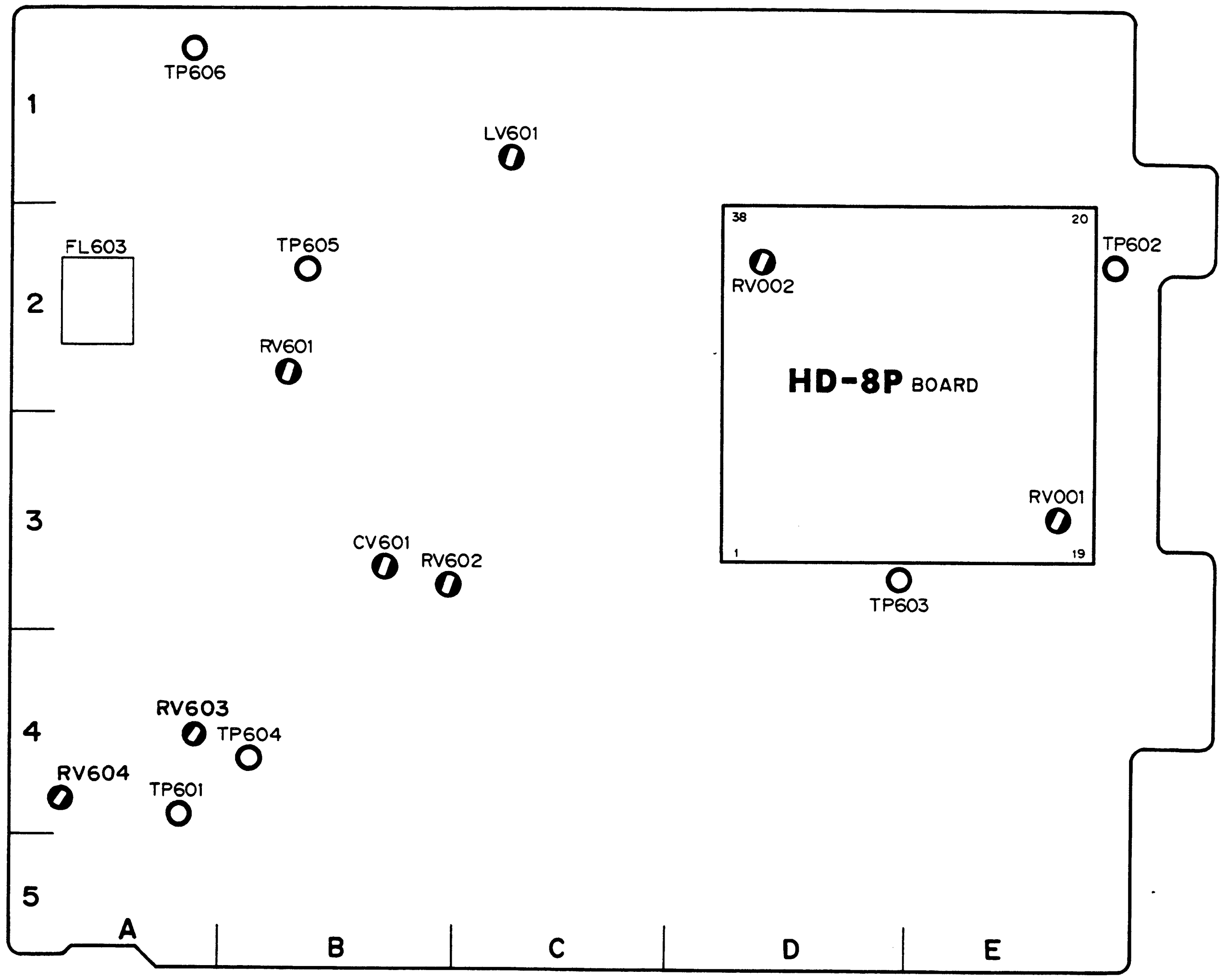

TP402
RV401
1
TP401
RV408
RV409
RV404
RV405
RV406
RV410
RV407
TP403
30
16
IC409
1
15
RV417
RV416
2
IC407
11
10
CV402
20
1
TP406
3
TP405
CV401
4
TP407
TP404
A
B
C
D
E

Locations of CN, RVs and TPs on the RP-56P Board


TP806
RV807
1
6
CN805
1
CN802
1
6
RV805
RV801
RV803
RV802
RV806
2
TP802
3
CN804
1
11
D
TP805
C
B
A
TP804

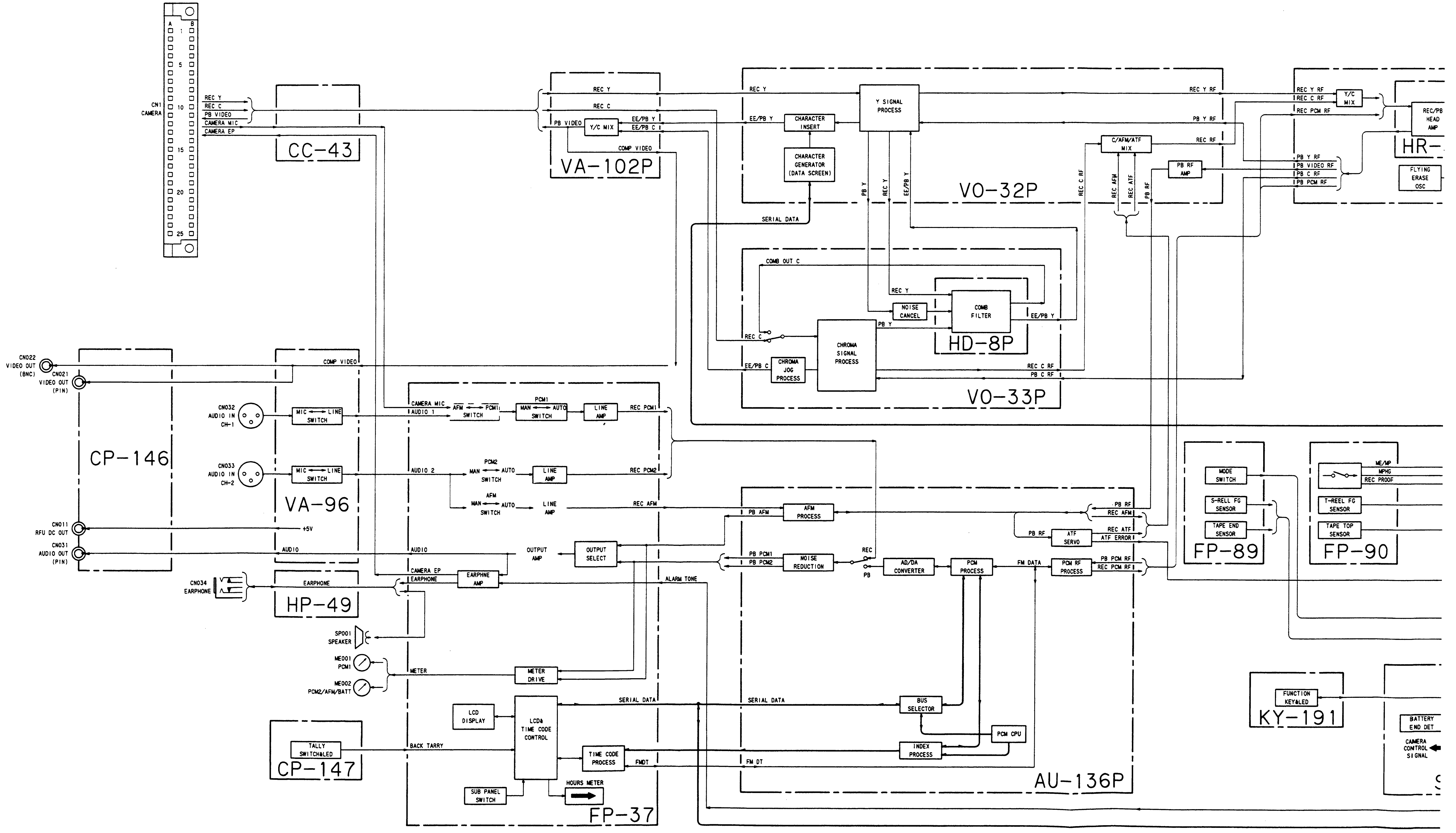
Locations of CV, FL, LV, RVs and TPs on the VO-33P Board

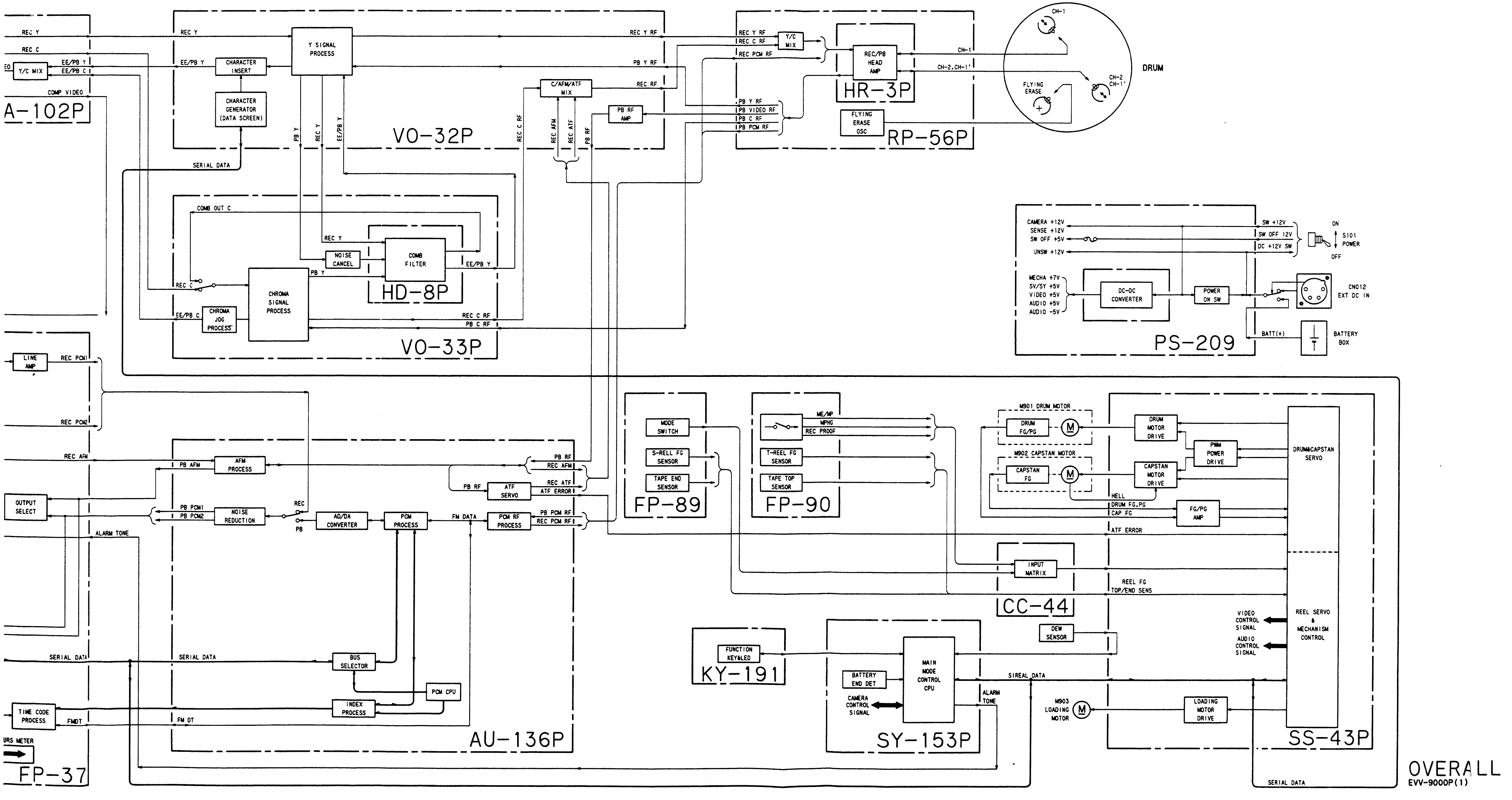
- A side (component side)


TP606
1
LV601
38
20
TP602
FL603
TP605
RV002
2
RV601
HD-8P BOARD
RV001
3
CV601
RV602
1
19
TP603
RV603
4
TP604
RV604
TP601
5
A
B
C
D
E

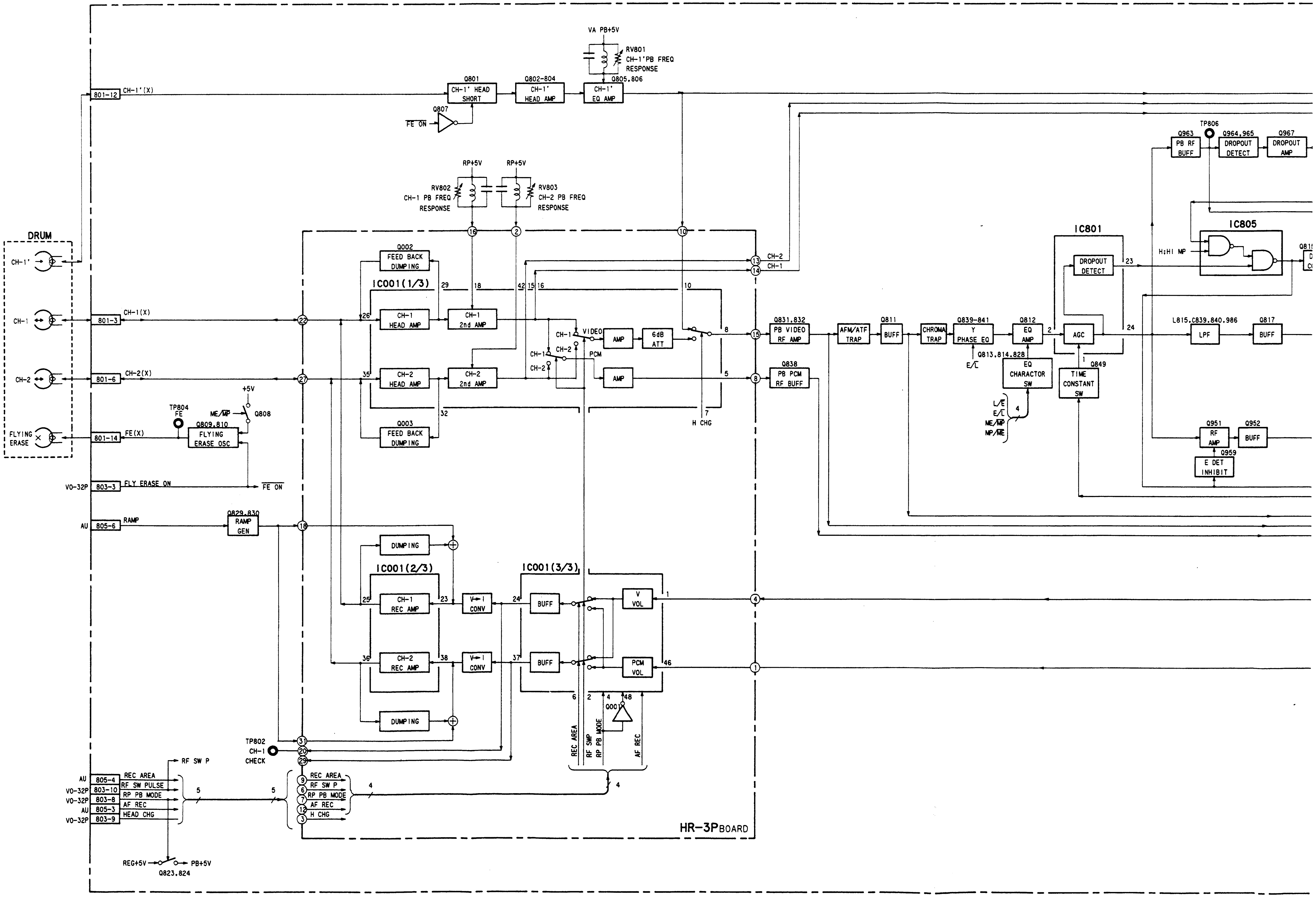
SECTION 11
BLOCK DIAGRAM

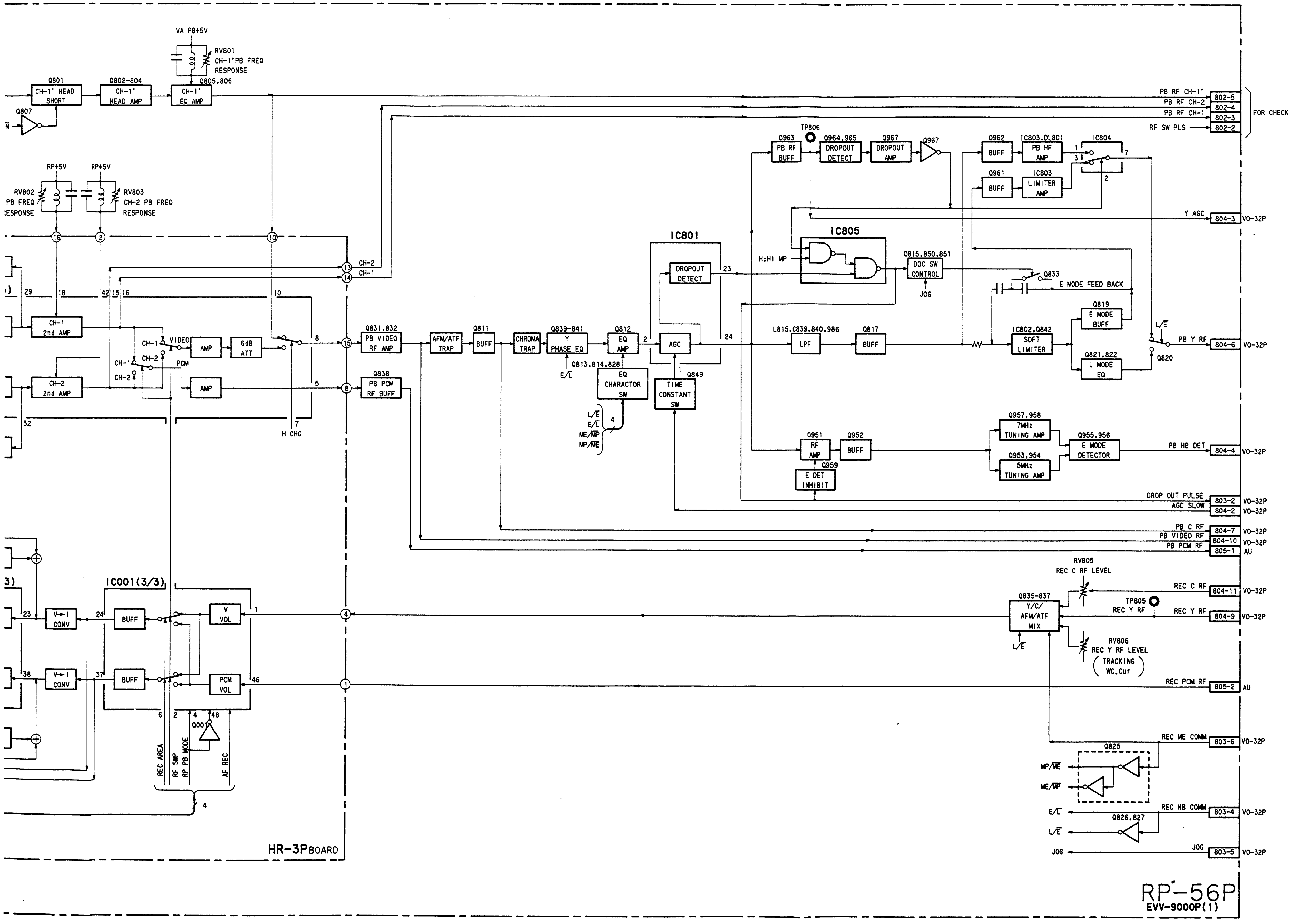
OVERALL


CN1 CAMERA
REC Y
REC C
PB VIDEO
CAMERA MIC
CAMERA EP
CC-43
VA-102P
Y/C MIX
EE/PB Y
EE/PB C
COMP VIDEO
VO-32P
Y SIGNAL PROCESS
CHARACTER INSERT
CHARACTER GENERATOR (DATA SCREEN)
SERIAL DATA
REC Y RF
PB Y RF
REC RF
C/AFM/ATF MIX
PB RF AMP
REC C RF
REC AFM
REC ATF
PB RF
REC PCM RF
REC/PB HEAD AMP
PB VIDEO RF
PB C RF
PB PCM RF
FLYING ERASE OSC
HR-
VO-33P
COMB OUT C
NOISE CANCEL
COMB FILTER
HD-8P
CHROMA SIGNAL PROCESS
CHROMA JOG PROCESS
PB C RF
CN022 VIDEO OUT (BNC)
CN021 VIDEO OUT (PIN)
CP-146
CN032 AUDIO IN CH-1
CN033 AUDIO IN CH-2
MIC LINE SWITCH
VA-96
CN011 RFU DC OUT
+5V
CN031 AUDIO OUT (PIN)
AUDIO
CN034 EARPHONE
EARPHONE
HP-49
AUDIO 1
AUDIO 2
AFM PCM1 SWITCH
PCM1 MAN AUTO SWITCH
PCM2 MAN AUTO SWITCH
AFM MAN AUTO SWITCH
LINE AMP
REC PCM1
REC PCM2
REC AFM
OUTPUT AMP
OUTPUT SELECT
EARPHNE AMP
ALARM TONE
SP001 SPEAKER
ME001 PCM1
ME002 PCM2/AFM/BATT
METER
METER DRIVE
LCD DISPLAY
LCD& TIME CODE CONTROL
TIME CODE PROCESS
FMDT
SUB PANEL SWITCH
HOURS METER
BACK TARRY
TALLY SWITCH&LED
CP-147
FP-37
AU-136P
PB AFM
AFM PROCESS
PB PCM1
PB PCM2
NOISE REDUCTION
REC
PB
AD/DA CONVERTER
PCM PROCESS
FM DATA
PCM RF PROCESS
ATF SERVO
ATF ERROR
BUS SELECTOR
PCM CPU
INDEX PROCESS
FM DT
MODE SWITCH
S-REEL FG SENSOR
TAPE END SENSOR
FP-89
ME/MP
MPHG
REC PROOF
T-REEL FG SENSOR
TAPE TOP SENSOR
FP-90
FUNCTION KEY&LED
KY-191
BATTERY END DET
CAMERA CONTROL SIGNAL

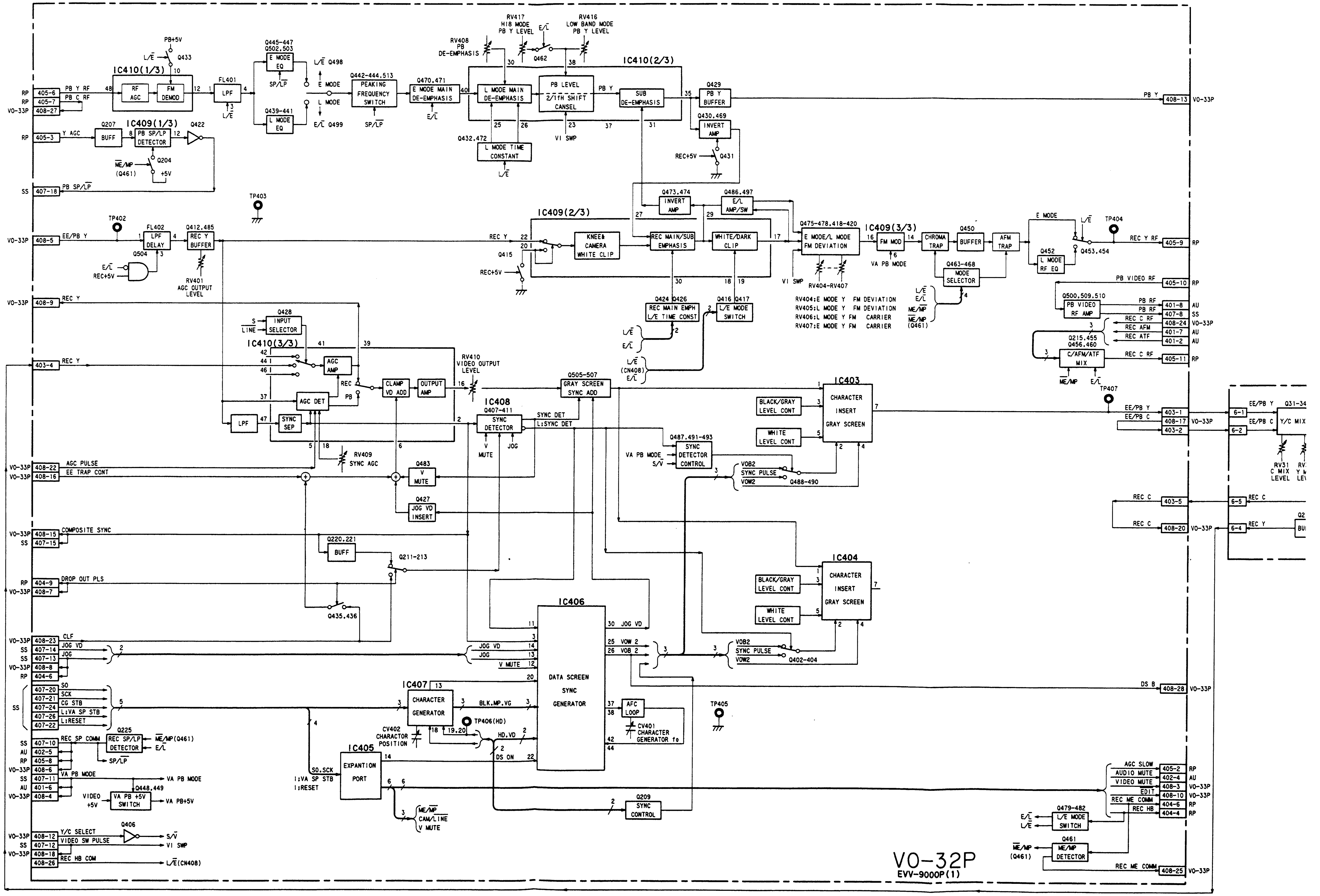

REC Y
REC C
Y/C MIX
EE/PB Y
EE/PB C
COMP VIDEO
A-102P
CHARACTER INSERT
CHARACTER GENERATOR (DATA SCREEN)
Y SIGNAL PROCESS
REC Y RF
PB Y RF
C/AFM/ATF MIX
REC RF
PB RF AMP
PB Y
REC Y
EE/PB Y
REC C RF
REC AFM
REC ATF
PB RF
VO-32P
SERIAL DATA
REC Y RF
REC C RF
REC PCM RF
Y/C MIX
REC/PB HEAD AMP
HR-3P
PB Y RF
PB VIDEO RF
PB C RF
PB PCM RF
FLYING ERASE OSC
RP-56P
CH-1
CH-2, CH-1'
FLYING ERASE
DRUM
COMB OUT C
REC Y
NOISE CANCEL
COMB FILTER
HD-8P
EE/PB Y
PB Y
REC C
EE/PB C
CHROMA JOG PROCESS
CHROMA SIGNAL PROCESS
REC C RF
PB C RF
VO-33P
CAMERA +12V
SENSE +12V
SW OFF +5V
UNSW +12V
SW +12V
SW OFF 12V
DC +12V SW
ON
S101 POWER
OFF
MECHA +7V
SV/SY +5V
VIDEO +5V
AUDIO +5V
AUDIO -5V
DC-DC CONVERTER
POWER ON SW
CN012 EXT DC IN
BATT(+)
BATTERY BOX
PS-209
LINE AMP
REC PCM1
REC PCM2
REC AFM
PB AFM
AFM PROCESS
OUTPUT SELECT
PB PCM1
PB PCM2
NOISE REDUCTION
REC
PB
AD/DA CONVERTER
PCM PROCESS
FM DATA
PCM RF PROCESS
PB RF
REC AFM
PB RF
ATF SERVO
REC ATF
ATF ERROR
PB PCM RF
REC PCM RF
ALARM TONE
SERIAL DATA
BUS SELECTOR
PCM CPU
INDEX PROCESS
TIME CODE PROCESS
FMDT
FM DT
URS METER
FP-37
AU-136P
MODE SWITCH
S-RELL FG SENSOR
TAPE END SENSOR
FP-89
ME/MP
MPHG
REC PROOF
T-REEL FG SENSOR
TAPE TOP SENSOR
FP-90
M901 DRUM MOTOR
DRUM FG/PG
M
M902 CAPSTAN MOTOR
CAPSTAN FG
DRUM MOTOR DRIVE
PWM POWER DRIVE
CAPSTAN MOTOR DRIVE
HELL
DRUM FG, PG
CAP FG
FG/PG AMP
ATF ERROR
DRUM&CAPSTAN SERVO
INPUT MATRIX
REEL FG
TOP/END SENS
CC-44
FUNCTION KEY&LED
KY-191
BATTERY END DET
CAMERA CONTROL SIGNAL
MAIN MODE CONTROL CPU
SY-153P
DEW SENSOR
SIREAL DATA
ALARM TONE
M903 LOADING MOTOR
LOADING MOTOR DRIVE
VIDEO CONTROL SIGNAL
AUDIO CONTROL SIGNAL
REEL SERVO & MECHANISM CONTROL
SS-43P
SERIAL DATA
OVERALL
EVV-9000P(1)

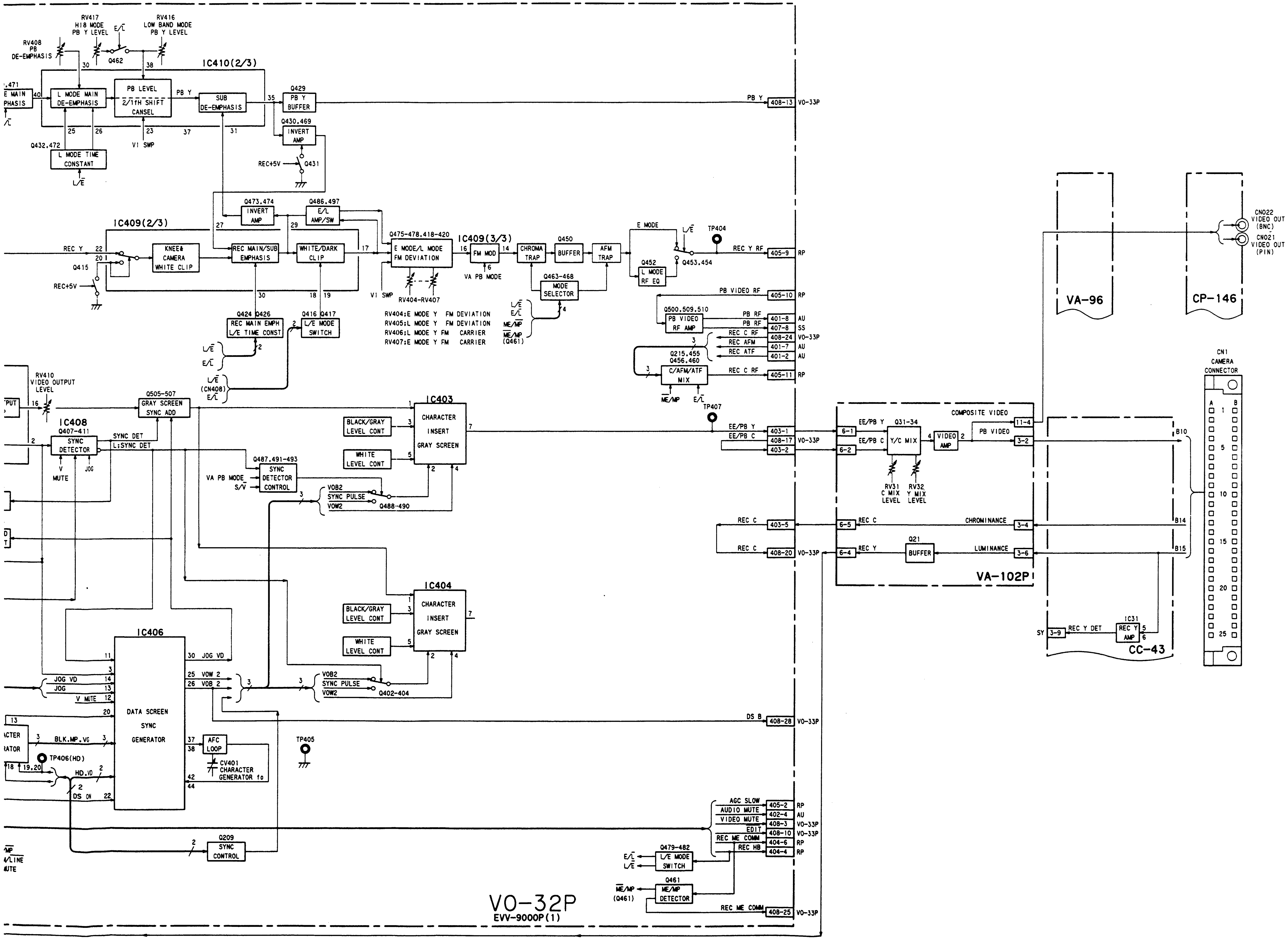
REC/PB HEAD AMP


DRUM
CH-1'
CH-1
CH-2
FLYING ERASE
801-12
CH-1'(X)
801-3
CH-1(X)
801-6
CH-2(X)
801-14
FE(X)
VO-32P 803-3
FLY ERASE ON
AU 805-6
RAMP
VA PB+5V
RV801
CH-1'PB FREQ RESPONSE
Q801
CH-1' HEAD SHORT
Q802-804
CH-1' HEAD AMP
Q805,806
CH-1' EQ AMP
Q807
FE ON
RP+5V
RP+5V
RV802
CH-1 PB FREQ RESPONSE
RV803
CH-2 PB FREQ RESPONSE
Q002
FEED BACK DUMPING
IC001(1/3)
CH-1 HEAD AMP
CH-1 2nd AMP
CH-2 HEAD AMP
CH-2 2nd AMP
Q003
FEED BACK DUMPING
VIDEO
PCM
AMP
6dB ATT
AMP
H CHG
CH-2
CH-1
TP804
FE
Q809,810
FLYING ERASE OSC
+5V
ME/MP
Q808
FE ON
Q829,830
RAMP GEN
DUMPING
IC001(2/3)
CH-1 REC AMP
CH-2 REC AMP
DUMPING
V→I CONV
V→I CONV
IC001(3/3)
BUFF
BUFF
V VOL
PCM VOL
Q001
REC AREA
RF SWP
RP PB MODE
AF REC
TP802
CH-1 CHECK
RF SW P
AU 805-4
VO-32P 803-10
VO-32P 803-8
AU 805-3
VO-32P 803-9
REC AREA
RF SW PULSE
RP PB MODE
AF REC
HEAD CHG
REC AREA
RF SW P
RP PB MODE
AF REC
H CHG
REG+5V
PB+5V
Q823,824
HR-3P BOARD
Q831,832
PB VIDEO RF AMP
Q838
PB PCM RF BUFF
AFM/ATF TRAP
Q811
BUFF
CHROMA TRAP
Q839-841
Y PHASE EQ
Q812
EQ AMP
Q813,814,828
E/L
EQ CHARACTOR SW
L/E
E/L
ME/MP
NP/ME
IC801
DROPOUT DETECT
AGC
Q849
TIME CONSTANT SW
TP806
Q963
PB RF BUFF
Q964,965
DROPOUT DETECT
Q967
DROPOUT AMP
H:HI MP
IC805
Q815
L815,C839,840,986
LPF
Q817
BUFF
Q951
RF AMP
Q952
BUFF
Q959
E DET INHIBIT

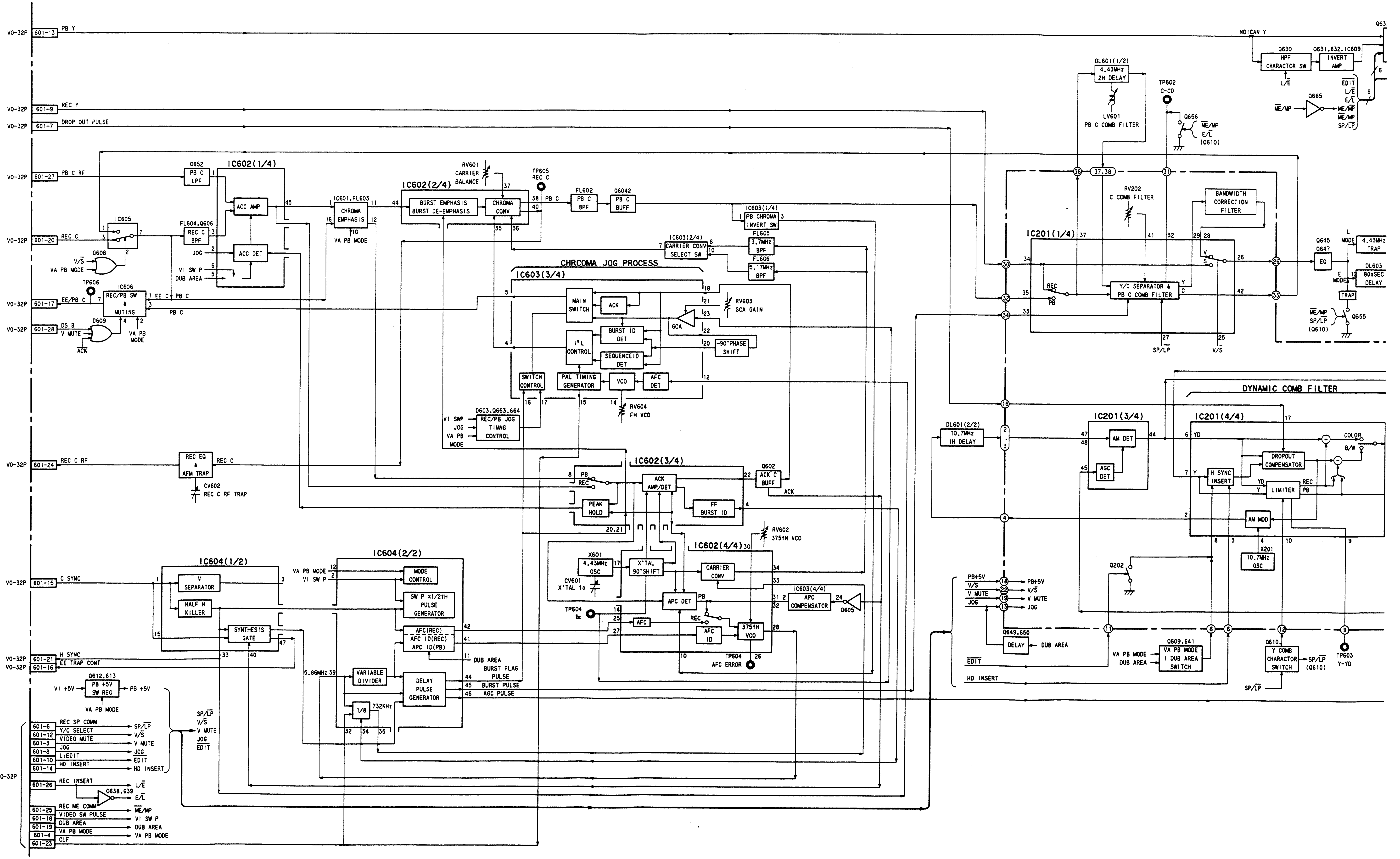

VA PB+5V
RV801
CH-1' PB FREQ
RESPONSE
Q805,806
Q801
CH-1' HEAD SHORT
Q802-804
CH-1' HEAD AMP
CH-1' EQ AMP
Q807
RP+5V
RV802
PB FREQ
RESPONSE
RV803
CH-2 PB FREQ
RESPONSE
CH-1 2nd AMP
CH-2 2nd AMP
VIDEO
PCM
AMP
6dB ATT
H CHG
CH-2
CH-1
Q831,832
PB VIDEO RF AMP
Q838
PB PCM RF BUFF
AFM/ATF TRAP
Q811
BUFF
CHROMA TRAP
Q839-841
Y PHASE EQ
Q813,814,828
Q812
EQ AMP
EQ CHARACTOR SW
E/Ľ
L/E
ME/MP
MP/ME
IC801
DROPOUT DETECT
AGC
Q849
TIME CONSTANT SW
TP806
Q963
PB RF BUFF
Q964,965
DROPOUT DETECT
Q967
DROPOUT AMP
IC805
H:HI MP
Q815,850,851
DOC SW CONTROL
JOG
Q962
BUFF
IC803,DL801
PB HF AMP
IC804
Q961
BUFF
IC803
LIMITER AMP
Q833
E MODE FEED BACK
Q819
E MODE BUFF
L815,C839,840,986
LPF
Q817
BUFF
IC802,Q842
SOFT LIMITER
Q821,822
L MODE EQ
Q820
Y AGC
PB Y RF
Q951
RF AMP
Q952
BUFF
Q959
E DET INHIBIT
Q957,958
7MHz TUNING AMP
Q953,954
5MHz TUNING AMP
Q955,956
E MODE DETECTOR
PB HB DET
DROP OUT PULSE
AGC SLOW
PB C RF
PB VIDEO RF
PB PCM RF
PB RF CH-1'
PB RF CH-2
PB RF CH-1
RF SW PLS
802-5
802-4
802-3
802-2
FOR CHECK
804-3 VO-32P
804-6 VO-32P
804-4 VO-32P
803-2 VO-32P
804-2 VO-32P
804-7 VO-32P
804-10 VO-32P
805-1 AU
RV805
REC C RF LEVEL
Q835-837
Y/C/AFM/ATF MIX
TP805
REC Y RF
REC C RF
RV806
REC Y RF LEVEL
TRACKING WC,Cur
804-11 VO-32P
804-9 VO-32P
REC PCM RF
805-2 AU
REC ME COMM
803-6 VO-32P
Q825
REC HB COMM
803-4 VO-32P
Q826,827
JOG
803-5 VO-32P
IC001(3/3)
V→I CONV
BUFF
V VOL
PCM VOL
Q001
REC AREA
RF SWP
RP PB MODE
AF REC
HR-3P BOARD
RP-56P
EVV-9000P(1)

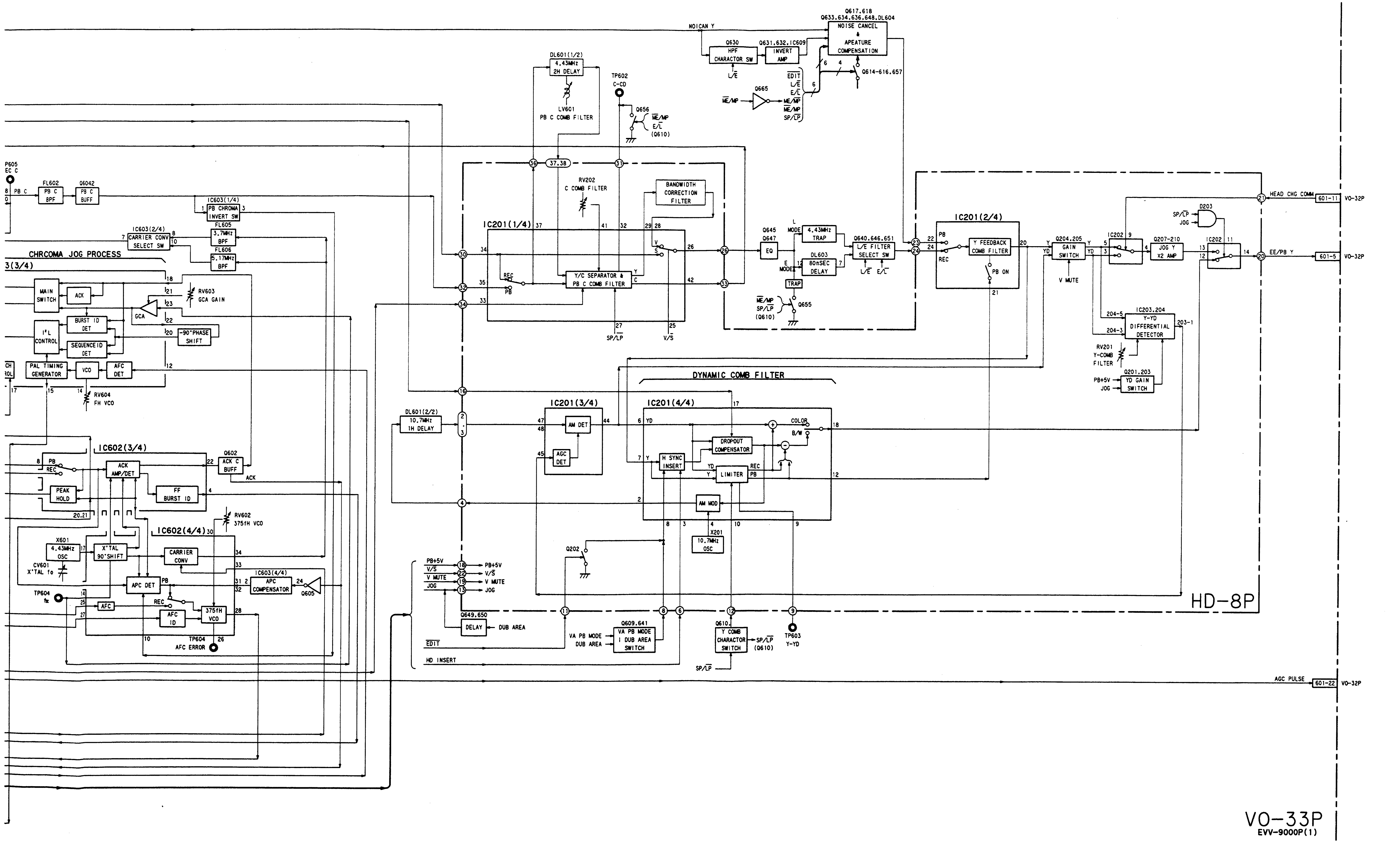
Y PROCESS


IC410(1/3)
RF AGC
FM DEMOD
PB+5V
L/Ē
Q433
FL401
LPF
Q445-447
Q502,503
E MODE EQ
Q439-441
L MODE EQ
SP/LP
L/Ē Q498
E MODE
L MODE
E/L Q499
Q442-444,513
PEAKING FREQUENCY SWITCH
Q470,471
E MODE MAIN DE-EMPHASIS
RV408 PB DE-EMPHASIS
RV417 HI8 MODE PB Y LEVEL
RV416 LOW BAND MODE PB Y LEVEL
Q462
IC410(2/3)
L MODE MAIN DE-EMPHASIS
PB LEVEL
2/1fH SHIFT CANSEL
PB Y
SUB DE-EMPHASIS
Q432,472
L MODE TIME CONSTANT
VI SWP
Q429
PB Y BUFFER
Q430,469
INVERT AMP
REC+5V
Q431
PB Y
RP 405-6 PB Y RF
RP 405-7 PB C RF
VO-33P 408-27
RP 405-3 Y AGC
Q207 BUFF
IC409(1/3)
PB SP/LP DETECTOR
Q422
ME/MP (Q461)
Q204
+5V
SS 407-18 PB SP/LP
TP403
TP402
VO-33P 408-5 EE/PB Y
FL402 LPF DELAY
Q504
E/L
REC+5V
Q412,485
REC Y BUFFER
RV401 AGC OUTPUT LEVEL
IC409(2/3)
REC Y
Q415
KNEE& CAMERA WHITE CLIP
Q473,474 INVERT AMP
Q486,497 E/L AMP/SW
REC MAIN/SUB EMPHASIS
WHITE/DARK CLIP
Q475-478,418-420
E MODE/L MODE FM DEVIATION
VI SWP
RV404-RV407
IC409(3/3)
FM MOD
VA PB MODE
CHROMA TRAP
Q450 BUFFER
AFM TRAP
Q463-468 MODE SELECTOR
E MODE
TP404
Q452 L MODE RF EQ
Q453,454
REC Y RF
405-9 RP
Q424 Q426
REC MAIN EMPH L/E TIME CONST
Q416 Q417
L/E MODE SWITCH
RV404:E MODE Y FM DEVIATION
RV405:L MODE Y FM DEVIATION
RV406:L MODE Y FM CARRIER
RV407:E MODE Y FM CARRIER
L/Ē E/L ME/MP ME/MP (Q461)
PB VIDEO RF 405-10 RP
Q500,509,510
PB VIDEO RF AMP
PB RF 401-8 AU
PB RF 407-8 SS
REC C RF 408-24 VO-33P
REC AFM 401-7 AU
REC ATF 401-2 AU
Q215,455 Q456,460
C/AFM/ATF MIX
REC C RF 405-11 RP
ME/MP E/L
TP407
VO-33P 408-9 REC Y
Q428
S LINE INPUT SELECTOR
IC410(3/3)
AGC AMP
AGC DET
REC PB
CLAMP VD ADD
OUTPUT AMP
RV410 VIDEO OUTPUT LEVEL
L/Ē E/L L/Ē (CN408) E/L
Q505-507
GRAY SCREEN SYNC ADD
IC408
Q407-411
SYNC DETECTOR
V MUTE
JOG
SYNC DET
L:SYNC DET
IC403
CHARACTER INSERT GRAY SCREEN
BLACK/GRAY LEVEL CONT
WHITE LEVEL CONT
EE/PB Y 403-1
EE/PB C 408-17 VO-33P
403-2
6-1 EE/PB Y Q31-34
6-2 EE/PB C Y/C MIX
RV31 C MIX LEVEL
VO-33P 403-4 REC Y
LPF
SYNC SEP
RV409 SYNC AGC
Q483 V MUTE
Q427 JOG VD INSERT
Q487,491-493
SYNC DETECTOR CONTROL
VA PB MODE
S/V
VOB2
SYNC PULSE
VOW2
Q488-490
VO-33P 408-22 AGC PULSE
VO-33P 408-16 EE TRAP CONT
VO-33P 408-15 COMPOSITE SYNC
SS 407-15
Q220,221 BUFF
Q211-213
RP 404-9 DROP OUT PLS
VO-33P 408-7
Q435,436
REC C 403-5
6-5 REC C
REC C 408-20 VO-33P
6-4 REC Y
IC404
CHARACTER INSERT GRAY SCREEN
BLACK/GRAY LEVEL CONT
WHITE LEVEL CONT
IC406
DATA SCREEN SYNC GENERATOR
JOG VD
VOW 2
VOB 2
Q402-404
VO-33P 408-23 CLF
SS 407-14 JOG VD
SS 407-13 JOG
VO-33P 408-8
RP 404-6
JOG VD
JOG
V MUTE
DS B 408-28 VO-33P
SS 407-20 SO
407-21 SCK
407-24 CG STB
407-26 L:VA SP STB
407-22 L:RESET
IC407
CHARACTER GENERATOR
BLK.MP.VG
TP406(HD)
CV402 CHARACTOR POSITION
HD,VD
DS ON
AFC LOOP
CV401 CHARACTER GENERATOR fo
TP405
SS 407-10 REC SP COMM
AU 402-5
RP 405-8
VO-33P 408-6
Q225 REC SP/LP DETECTOR
ME/MP(Q461)
E/L
SP/LP
SS 407-11 VA PB MODE
AU 401-6
VO-33P 408-4
VA PB MODE
Q448,449
VIDEO +5V
VA PB +5V SWITCH
VA PB+5V
IC405
EXPANTION PORT
SO,SCK
L:VA SP STB
L:RESET
ME/MP
CAM/LINE
V MUTE
Q209 SYNC CONTROL
AGC SLOW 405-2 RP
AUDIO MUTE 402-4 AU
VIDEO MUTE 408-3 VO-33P
EDIT 408-10 VO-33P
REC ME COMM 404-6 RP
REC HB 404-4 RP
Q479-482
L/E MODE SWITCH
E/L L/E
Q461 ME/MP DETECTOR
ME/MP (Q461)
REC ME COMM 408-25 VO-33P
VO-33P 408-12 Y/C SELECT
SS 407-12 VIDEO SW PULSE
VO-33P 408-18 REC HB COM
408-26
Q406
S/V
VI SWP
L/Ē(CN408)
VO-32P
EVV-9000P(1)


RV417 H18 MODE PB Y LEVEL
RV416 LOW BAND MODE PB Y LEVEL
RV408 PB DE-EMPHASIS
Q462
IC410(2/3)
L MODE MAIN DE-EMPHASIS
PB LEVEL 2/1fH SHIFT CANSEL
PB Y
SUB DE-EMPHASIS
Q429 PB Y BUFFER
Q430,469 INVERT AMP
REC+5V
Q431
Q432,472
L MODE TIME CONSTANT
V1 SWP
Q473,474 INVERT AMP
Q486,497 E/L AMP/SW
IC409(2/3)
REC Y
Q415
KNEE& CAMERA WHITE CLIP
REC MAIN/SUB EMPHASIS
WHITE/DARK CLIP
Q475-478,418-420
E MODE/L MODE FM DEVIATION
IC409(3/3)
FM MOD
CHROMA TRAP
Q450 BUFFER
AFM TRAP
VA PB MODE
Q463-468 MODE SELECTOR
E MODE
TP404
Q452 L MODE RF EQ
Q453,454
REC Y RF
RV404-RV407
RV404:E MODE Y FM DEVIATION
RV405:L MODE Y FM DEVIATION
RV406:L MODE Y FM CARRIER
RV407:E MODE Y FM CARRIER
ME/MP (Q461)
Q424 Q426 REC MAIN EMPH L/E TIME CONST
Q416 Q417 L/E MODE SWITCH
(CN408)
PB VIDEO RF
Q500,509,510 PB VIDEO RF AMP
PB RF
REC C RF
REC AFM
REC ATF
Q215,455 Q456,460
C/AFM/ATF MIX
RV410 VIDEO OUTPUT LEVEL
Q505-507 GRAY SCREEN SYNC ADD
IC408 Q407-411 SYNC DETECTOR
SYNC DET
L:SYNC DET
V MUTE
JOG
IC403
CHARACTER INSERT GRAY SCREEN
BLACK/GRAY LEVEL CONT
WHITE LEVEL CONT
TP407
EE/PB Y
EE/PB C
Q487,491-493 SYNC DETECTOR CONTROL
VA PB MODE
S/V
VOB2
SYNC PULSE
VOW2
Q488-490
REC C
IC404
CHARACTER INSERT GRAY SCREEN
IC406
DATA SCREEN SYNC GENERATOR
JOG VD
VOW 2
VOB 2
V MUTE
BLK.MP.VG
TP406(HD)
HD.VD
DS ON
AFC LOOP
CV401 CHARACTER GENERATOR fo
Q402-404
TP405
DS B
Q209 SYNC CONTROL
AGC SLOW
AUDIO MUTE
VIDEO MUTE
EDIT
REC ME COMM
REC HB
Q479-482 L/E MODE SWITCH
Q461 ME/MP DETECTOR
VO-32P
EVV-9000P(1)
408-13 VO-33P
405-9 RP
405-10 RP
401-8 AU
407-8 SS
408-24 VO-33P
401-7 AU
401-2 AU
405-11 RP
403-1
408-17 VO-33P
403-2
403-5
408-20 VO-33P
408-28 VO-33P
405-2 RP
402-4 AU
408-3 VO-33P
408-10 VO-33P
404-6 RP
404-4 RP
408-25 VO-33P
VA-96
CP-146
CN022 VIDEO OUT (BNC)
CN021 VIDEO OUT (PIN)
COMPOSITE VIDEO
Q31-34 Y/C MIX
VIDEO AMP
PB VIDEO
RV31 C MIX LEVEL
RV32 Y MIX LEVEL
CHROMINANCE
LUMINANCE
Q21 BUFFER
VA-102P
CN1 CAMERA CONNECTOR
B10
B14
B15
IC31 REC Y AMP
REC Y DET
SY
CC-43

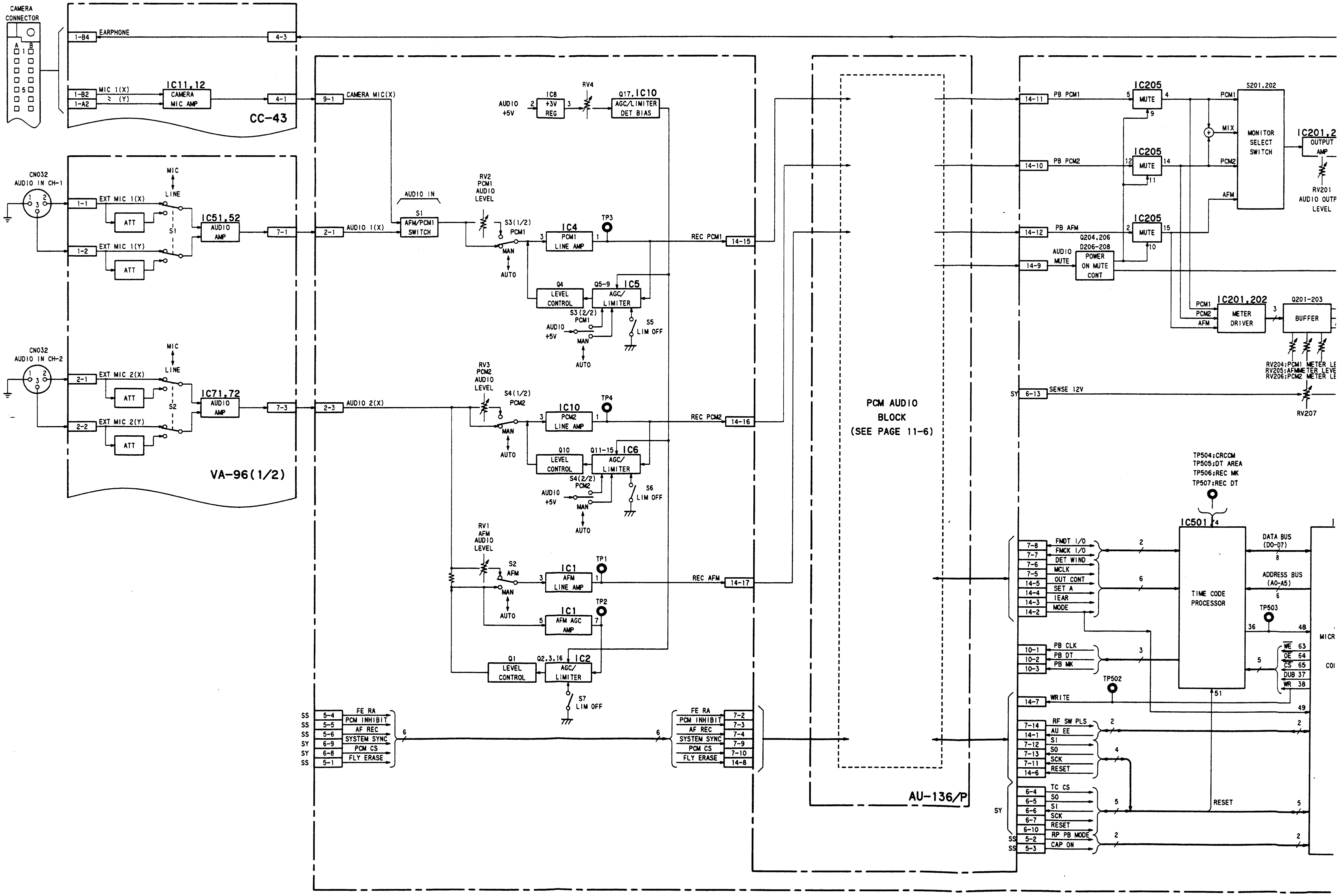
CHROMA PROCESS/COMB FILTER

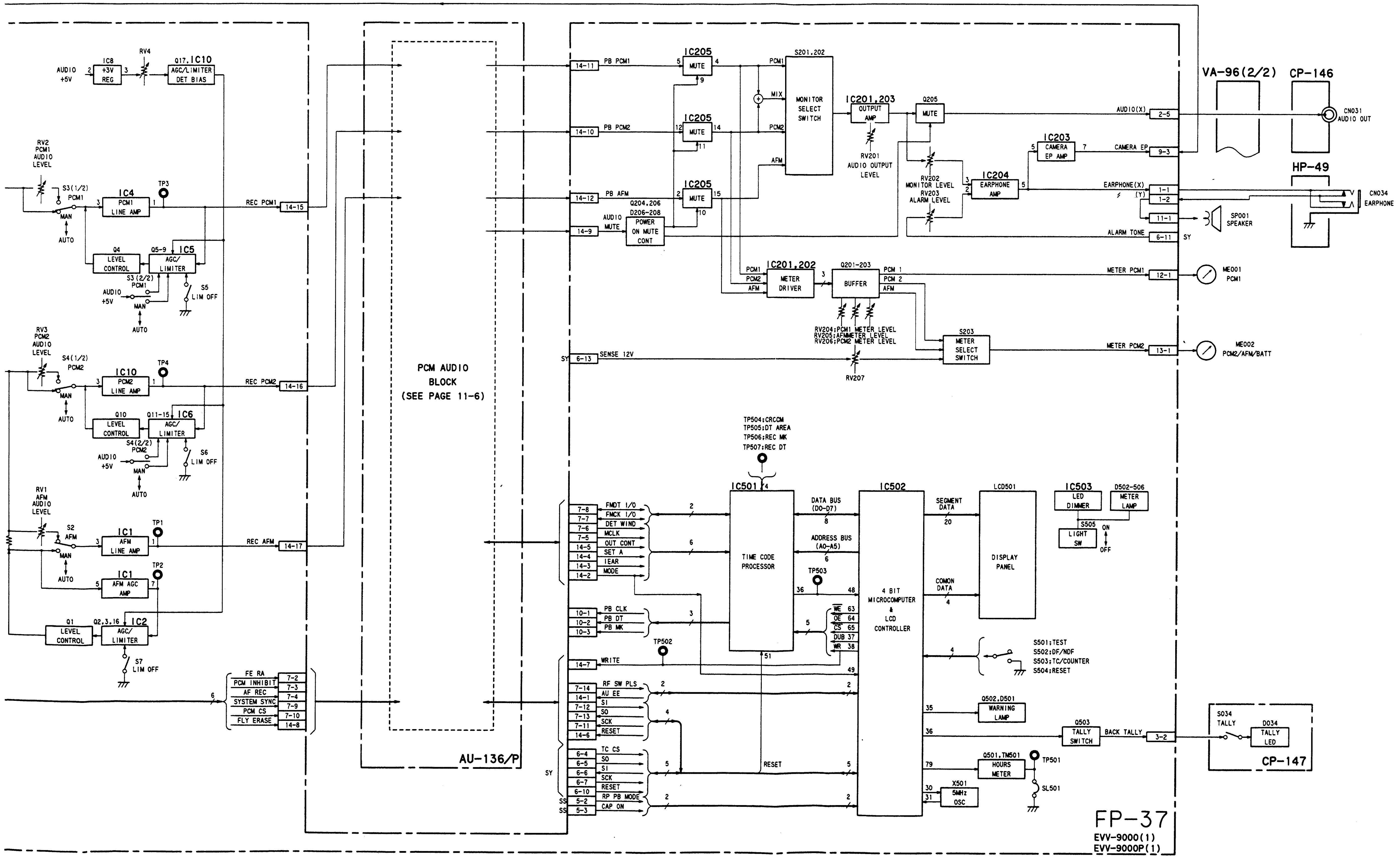

VO-32P
601-13
PB Y
601-9
REC Y
601-7
DROP OUT PULSE
601-27
PB C RF
601-20
REC C
601-17
EE/PB C
601-28
DS B
V MUTE
ACK
601-24
REC C RF
601-15
C SYNC
601-21
H SYNC
601-16
EE TRAP CONT
Q652
PB C LPF
IC602(1/4)
ACC AMP
ACC DET
IC605
Q608
V/S
VA PB MODE
FL604,Q606
REC C BPF
JOG
VI SW P
DUB AREA
TP606
IC606
REC/PB SW & MUTING
D609
VA PB MODE
EE C
PB C
RV601
CARRIER BALANCE
TP605
REC C
IC601,FL603
CHROMA EMPHASIS
IC602(2/4)
BURST EMPHASIS
BURST DE-EMPHASIS
CHROMA CONV
FL602
PB C BPF
Q6042
PB C BUFF
IC603(1/4)
PB CHROMA INVERT SW
IC603(2/4)
CARRIER CONV SELECT SW
FL605
3.7MHz BPF
FL606
5.17MHz BPF
CHRCOMA JOG PROCESS
IC603(3/4)
MAIN SWITCH
ACK
RV603
GCA GAIN
GCA
BURST ID DET
I²L CONTROL
SEQUENCE ID DET
-90°PHASE SHIFT
SWITCH CONTROL
PAL TIMING GENERATOR
VCO
AFC DET
RV604
FH VCO
D603,Q663,664
VI SWP
REC/PB JOG TIMING CONTROL
REC EQ & AFM TRAP
CV602
REC C RF TRAP
IC602(3/4)
PB
REC
ACK AMP/DET
PEAK HOLD
FF BURST ID
Q602
ACK C BUFF
RV602
375fH VCO
IC602(4/4)
X601
4.43MHz OSC
CV601
X'TAL fo
X'TAL 90°SHIFT
CARRIER CONV
APC DET
IC603(4/4)
APC COMPENSATOR
Q605
TP604
fH
AFC
AFC ID
375fH VCO
TP604
AFC ERROR
IC604(1/2)
V SEPARATOR
HALF H KILLER
SYNTHESIS GATE
IC604(2/2)
MODE CONTROL
SW P X1/2fH PULSE GENERATOR
AFC(REC)
AFC ID(REC)
APC ID(PB)
DUB AREA
BURST FLAG PULSE
BURST PULSE
AGC PULSE
5.86MHz
VARIABLE DIVIDER
1/8
732KHz
DELAY PULSE GENERATOR
Q612,613
VI +5V
PB +5V SW REG
PB +5V
601-6
REC SP COMM
SP/LP
601-12
Y/C SELECT
601-3
VIDEO MUTE
V MUTE
601-8
601-10
L:EDIT
EDIT
601-14
HD INSERT
601-26
REC INSERT
L/E
Q638,639
E/L
601-25
REC ME COMM
ME/MP
601-18
VIDEO SW PULSE
VI SW P
601-19
DUB AREA
601-4
VA PB MODE
601-23
CLF
NOICAN Y
Q630
HPF CHARACTOR SW
Q631,632,IC609
INVERT AMP
DL601(1/2)
4.43MHz 2H DELAY
LV601
PB C COMB FILTER
TP602
C-CD
Q656
(Q610)
Q665
RV202
C COMB FILTER
BANDWIDTH CORRECTION FILTER
IC201(1/4)
Y/C SEPARATOR & PB C COMB FILTER
Q645
Q647
EQ
4.43MHz TRAP
DL603
80nSEC DELAY
TRAP
Q655
DYNAMIC COMB FILTER
DL601(2/2)
10.7MHz 1H DELAY
IC201(3/4)
AM DET
AGC DET
IC201(4/4)
YD
COLOR
B/W
DROPOUT COMPENSATOR
H SYNC INSERT
LIMITER
AM MOD
X201
10.7MHz OSC
Q202
PB+5V
Q649,650
DELAY
HD INSERT
Q609,641
VA PB MODE I DUB AREA SWITCH
Q610
Y COMB CHARACTOR SWITCH
TP603
Y-YD


Q617,618
Q633,634,636,648,DL604
NOISE CANCEL & APEATURE COMPENSATION
NOICAN Y
Q630
HPF CHARACTOR SW
Q631,632,IC609
INVERT AMP
L/E
EDIT
L/E
E/L
ME/MP
SP/LP
Q665
ME/MP
Q614-616,657
DL601(1/2)
4.43MHz 2H DELAY
LV601
PB C COMB FILTER
TP602
C-CD
Q656
ME/MP
E/L
(Q610)
P605
EC C
PB C
FL602
PB C BPF
Q6042
PB C BUFF
IC603(1/4)
PB CHROMA INVERT SW
IC603(2/4)
CARRIER CONV SELECT SW
FL605
3.7MHz BPF
FL606
5.17MHz BPF
CHRCOMA JOG PROCESS
3(3/4)
MAIN SWITCH
ACK
RV603
GCA GAIN
GCA
BURST ID DET
SEQUENCE ID DET
1/2L CONTROL
-90°PHASE SHIFT
PAL TIMING GENERATOR
VCO
AFC DET
RV604
FH VCO
RV202
C COMB FILTER
BANDWIDTH CORRECTION FILTER
IC201(1/4)
Y/C SEPARATOR & PB C COMB FILTER
REC
PB
SP/LP
V/S
Q645
Q647
EQ
L MODE
4.43MHz TRAP
E MODE
DL603
80nSEC DELAY
TRAP
ME/MP
SP/LP
(Q610)
Q655
Q640,646,651
L/E FILTER SELECT SW
L/E
E/L
IC201(2/4)
PB
REC
Y FEEDBACK COMB FILTER
PB ON
Q204,205
GAIN SWITCH
YD
V MUTE
IC202
Q207-210
JOG Y X2 AMP
D203
SP/LP
JOG
HEAD CHG COMM
601-11
VO-32P
EE/PB Y
601-5
VO-32P
IC203,204
Y-YD DIFFERENTIAL DETECTOR
RV201
Y-COMB FILTER
Q201,203
YD GAIN SWITCH
PB+5V
JOG
DYNAMIC COMB FILTER
DL601(2/2)
10.7MHz 1H DELAY
IC201(3/4)
AM DET
AGC DET
IC201(4/4)
COLOR
B/W
DROPOUT COMPENSATOR
H SYNC INSERT
LIMITER
AM MOD
X201
10.7MHz OSC
Q202
IC602(3/4)
PB
REC
ACK AMP/DET
Q602
ACK C BUFF
ACK
PEAK HOLD
FF BURST ID
RV602
375fH VCO
IC602(4/4)
X601
4.43MHz OSC
CV601
X'TAL fo
X'TAL 90°SHIFT
CARRIER CONV
IC603(4/4)
APC COMPENSATOR
Q605
APC DET
TP604
fsc
AFC
AFC ID
375fH VCO
TP604
AFC ERROR
PB+5V
V/S
V MUTE
JOG
Q649,650
DELAY
DUB AREA
EDIT
HD INSERT
Q609,641
VA PB MODE I DUB AREA SWITCH
VA PB MODE
DUB AREA
Q610
Y COMB CHARACTOR SWITCH
SP/LP
(Q610)
TP603
Y-YD
HD-8P
AGC PULSE
601-22
VO-32P

VO-33P
EVV-9000P(1)

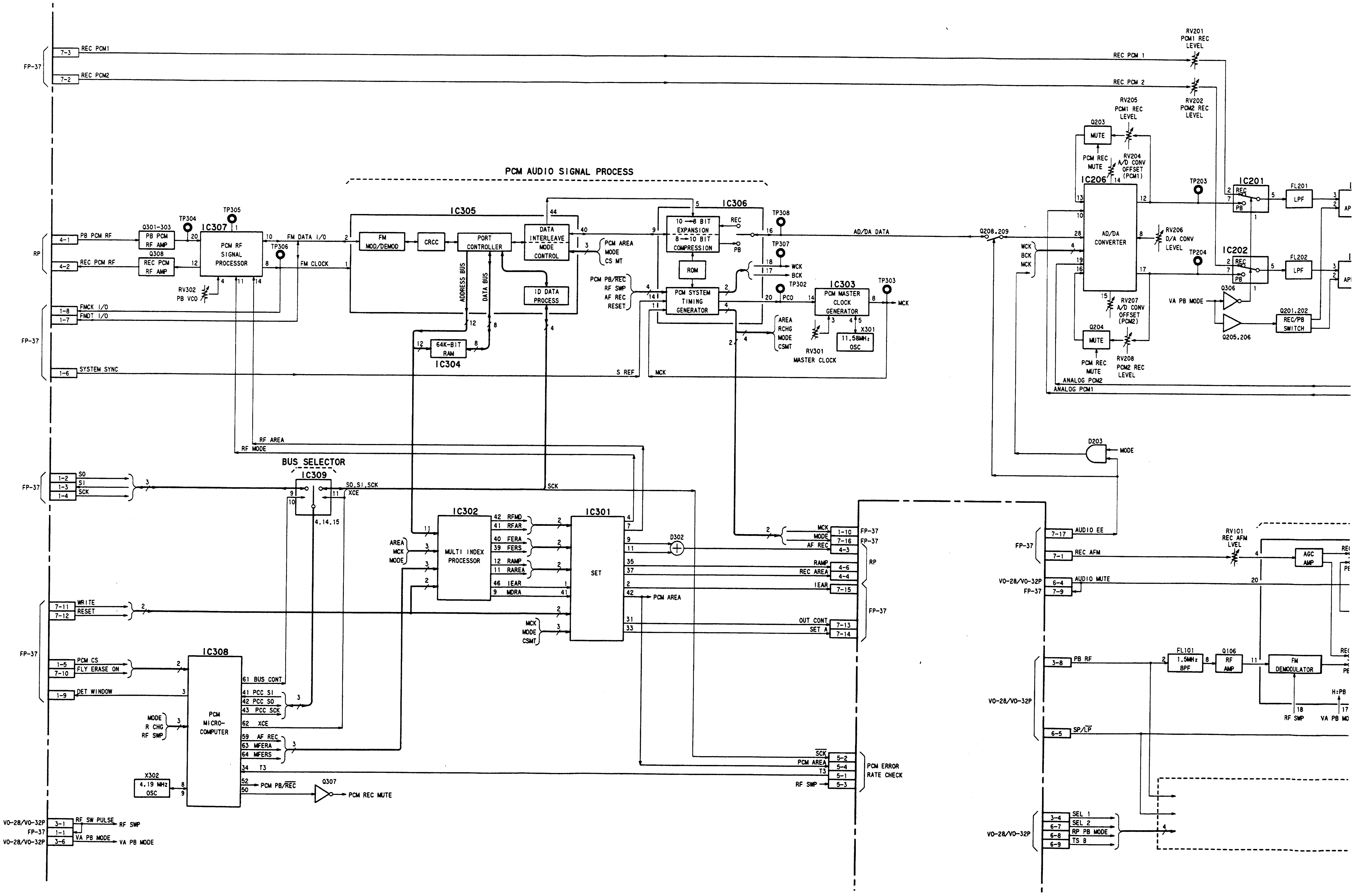
AUDIO INPUT/OUTPUT

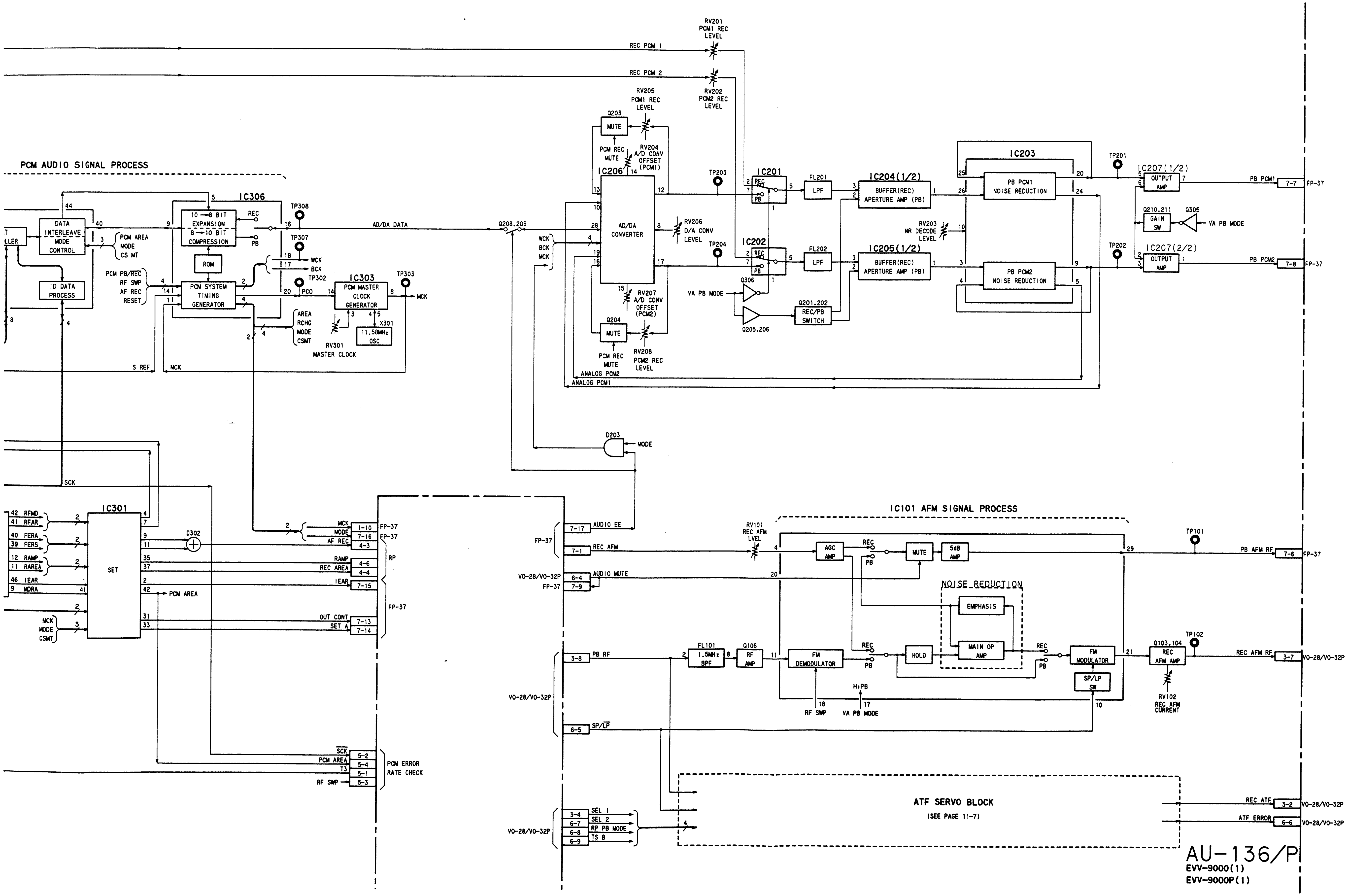

CAMERA CONNECTOR
EARPHONE
1-B4
4-3
1-B2
1-A2
MIC 1(X)
(Y)
IC11,12
CAMERA MIC AMP
4-1
CC-43
CN032 AUDIO IN CH-1
CN032 AUDIO IN CH-2
MIC
LINE
1-1
1-2
EXT MIC 1(X)
EXT MIC 1(Y)
ATT
S1
IC51,52
AUDIO AMP
7-1
2-1
2-2
EXT MIC 2(X)
EXT MIC 2(Y)
S2
IC71,72
AUDIO AMP
7-3
VA-96(1/2)
9-1
CAMERA MIC(X)
2-1
AUDIO 1(X)
2-3
AUDIO 2(X)
AUDIO IN
S1
AFM/PCM1 SWITCH
AUDIO +5V
IC8
+3V REG
RV4
Q17,IC10
AGC/LIMITER DET BIAS
RV2 PCM1 AUDIO LEVEL
S3(1/2) PCM1
MAN
AUTO
IC4
PCM1 LINE AMP
TP3
REC PCM1
14-15
Q4
LEVEL CONTROL
Q5-9 IC5
AGC/LIMITER
S3(2/2) PCM1
S5 LIM OFF
RV3 PCM2 AUDIO LEVEL
S4(1/2) PCM2
IC10
PCM2 LINE AMP
TP4
REC PCM2
14-16
Q10
LEVEL CONTROL
Q11-15 IC6
AGC/LIMITER
S4(2/2) PCM2
S6 LIM OFF
RV1 AFM AUDIO LEVEL
S2 AFM
IC1
AFM LINE AMP
TP1
REC AFM
14-17
IC1
AFM AGC AMP
TP2
Q1
LEVEL CONTROL
Q2,3,16 IC2
AGC/LIMITER
S7 LIM OFF
SS 5-4 FE RA
SS 5-5 PCM INHIBIT
SS 5-6 AF REC
SY 6-9 SYSTEM SYNC
SY 6-8 PCM CS
SS 5-1 FLY ERASE
6
FE RA 7-2
PCM INHIBIT 7-3
AF REC 7-4
SYSTEM SYNC 7-9
PCM CS 7-10
FLY ERASE 14-8
PCM AUDIO BLOCK (SEE PAGE 11-6)
AU-136/P
14-11 PB PCM1
14-10 PB PCM2
14-12 PB AFM
14-9 AUDIO MUTE
IC205
MUTE
Q204,206 D206-208
POWER ON MUTE CONT
S201,202
PCM1
MIX
PCM2
AFM
MONITOR SELECT SWITCH
IC201,2
OUTPUT AMP
RV201 AUDIO OUTPUT LEVEL
IC201,202
METER DRIVER
Q201-203
BUFFER
RV204:PCM1 METER LEVEL
RV205:AFM METER LEVEL
RV206:PCM2 METER LEVEL
SY 6-13 SENSE 12V
RV207
TP504:CRCCM
TP505:DT AREA
TP506:REC MK
TP507:REC DT
IC501
7-8 FMDT I/O
7-7 FMCK I/O
7-6 DET WIND
7-5 MCLK
14-5 OUT CONT
14-4 SET A
14-3 IEAR
14-2 MODE
TIME CODE PROCESSOR
DATA BUS (D0-D7)
ADDRESS BUS (A0-A5)
TP503
10-1 PB CLK
10-2 PB DT
10-3 PB MK
WE 63
OE 64
CS 65
DUB 37
WR 38
MICR
TP502
14-7 WRITE
7-14 RF SW PLS
14-1 AU EE
7-12 SI
7-13 SO
7-11 SCK
14-6 RESET
6-4 TC CS
6-5 SO
6-6 SI
6-7 SCK
6-10 RESET
SS 5-2 RP PB MODE
SS 5-3 CAP ON
SY
RESET



AUDIO +5V
IC8 +3V REG
RV4
Q17, IC10 AGC/LIMITER DET BIAS
RV2 PCM1 AUDIO LEVEL
S3(1/2) PCM1
IC4 PCM1 LINE AMP
TP3
MAN
AUTO
REC PCM1
14-15
Q4 LEVEL CONTROL
Q5-9 IC5 AGC/LIMITER
S3(2/2) PCM1
AUDIO +5V
S5 LIM OFF
RV3 PCM2 AUDIO LEVEL
S4(1/2) PCM2
IC10 PCM2 LINE AMP
TP4
REC PCM2
14-16
Q10 LEVEL CONTROL
Q11-15 IC6 AGC/LIMITER
S4(2/2) PCM2
S6 LIM OFF
RV1 AFM AUDIO LEVEL
S2 AFM
IC1 AFM LINE AMP
TP1
REC AFM
14-17
IC1 AFM AGC AMP
TP2
Q1 LEVEL CONTROL
Q2,3,16 IC2 AGC/LIMITER
S7 LIM OFF
FE RA
PCM INHIBIT
AF REC
SYSTEM SYNC
PCM CS
FLY ERASE
7-2
7-3
7-4
7-9
7-10
14-8
PCM AUDIO BLOCK (SEE PAGE 11-6)
AU-136/P
14-11 PB PCM1
14-10 PB PCM2
14-12 PB AFM
14-9 AUDIO MUTE
IC205 MUTE
IC205 MUTE
IC205 MUTE
Q204,206 D206-208 POWER ON MUTE CONT
S201,202 MONITOR SELECT SWITCH
PCM1
MIX
PCM2
AFM
IC201,203 OUTPUT AMP
RV201 AUDIO OUTPUT LEVEL
Q205 MUTE
RV202 MONITOR LEVEL
RV203 ALARM LEVEL
IC203 CAMERA EP AMP
IC204 EARPHONE AMP
AUDIO(X) 2-5
CAMERA EP 9-3
EARPHONE(X) (Y) 1-1 1-2
11-1
ALARM TONE 6-11
SY
VA-96(2/2)
CP-146
CN031 AUDIO OUT
HP-49
CN034 EARPHONE
SP001 SPEAKER
IC201,202 METER DRIVER
Q201-203 BUFFER
PCM 1
PCM 2
AFM
RV204:PCM1 METER LEVEL
RV205:AFMMETER LEVEL
RV206:PCM2 METER LEVEL
METER PCM1 12-1
ME001 PCM1
S203 METER SELECT SWITCH
METER PCM2 13-1
ME002 PCM2/AFM/BATT
SY 6-13 SENSE 12V
RV207
TP504:CRCCM
TP505:DT AREA
TP506:REC MK
TP507:REC DT
IC501
TIME CODE PROCESSOR
7-8 FMDT I/O
7-7 FMCK I/O
7-6 DET WIND
7-5 MCLK
14-5 OUT CONT
14-4 SET A
14-3 IEAR
14-2 MODE
10-1 PB CLK
10-2 PB DT
10-3 PB MK
14-7 WRITE
TP502
TP503
DATA BUS (D0-D7)
ADDRESS BUS (A0-A5)
IC502
4 BIT MICROCOMPUTER & LCD CONTROLLER
WE 63
OE 64
CS 65
DUB 37
WR 38
SEGMENT DATA
COMON DATA
LCD501
DISPLAY PANEL
IC503 LED DIMMER
D502-506 METER LAMP
S505 LIGHT SW
ON
OFF
S501:TEST
S502:DF/NDF
S503:TC/COUNTER
S504:RESET
7-14 RF SW PLS
14-1 AU EE
7-12 SI
7-13 SO
7-11 SCK
14-6 RESET
6-4 TC CS
6-5 SO
6-6 SI
6-7 SCK
6-10 RESET
5-2 RP PB MODE
5-3 CAP ON
SS
SY
RESET
Q502,D501 WARNING LAMP
Q503 TALLY SWITCH
BACK TALLY 3-2
Q501,TM501 HOURS METER
TP501
SL501
X501 5MHz OSC
S034 TALLY
D034 TALLY LED
CP-147
FP-37
EVV-9000(1)
EVV-9000P(1)

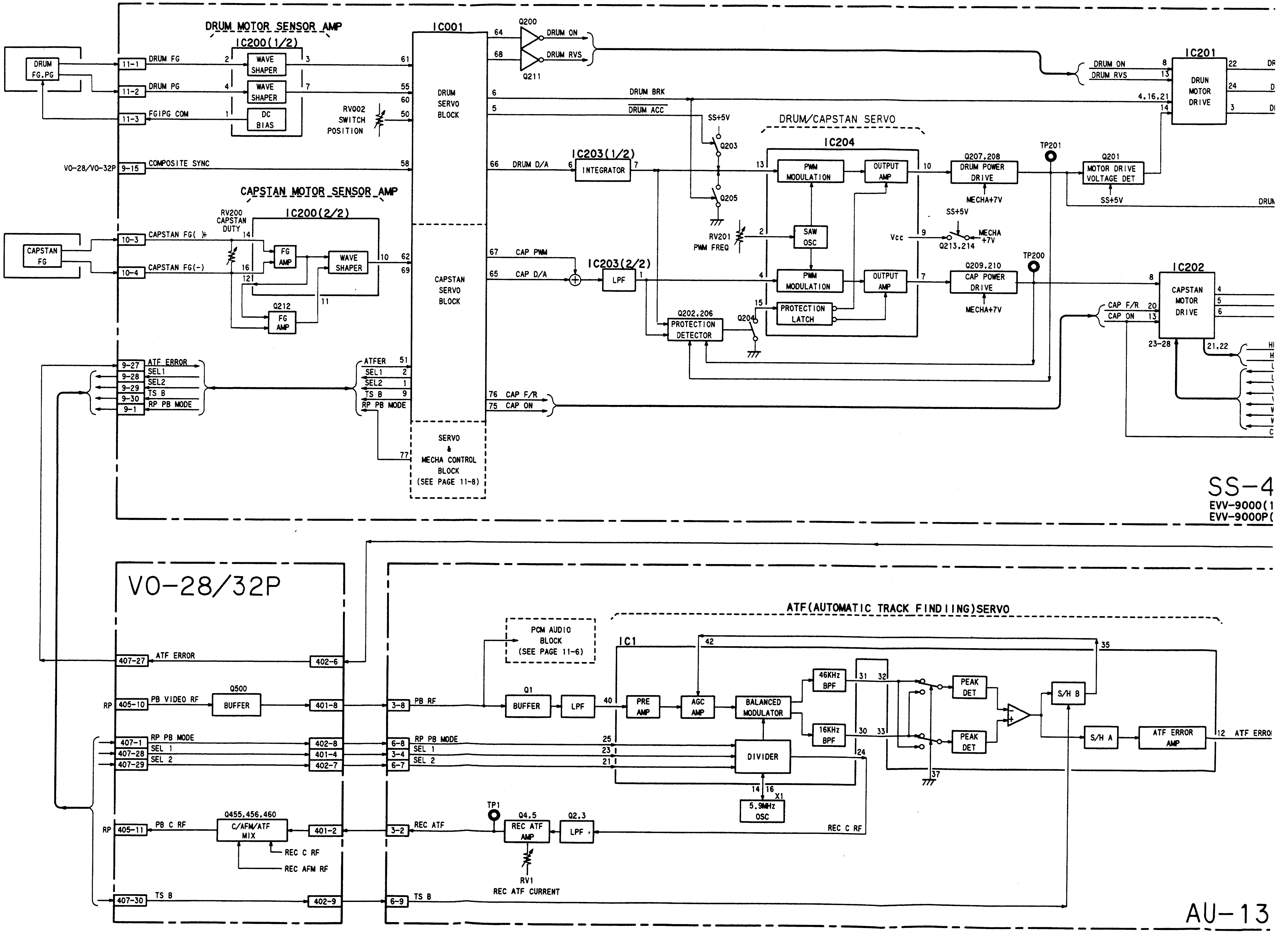
PCM AUDIO PROCESS

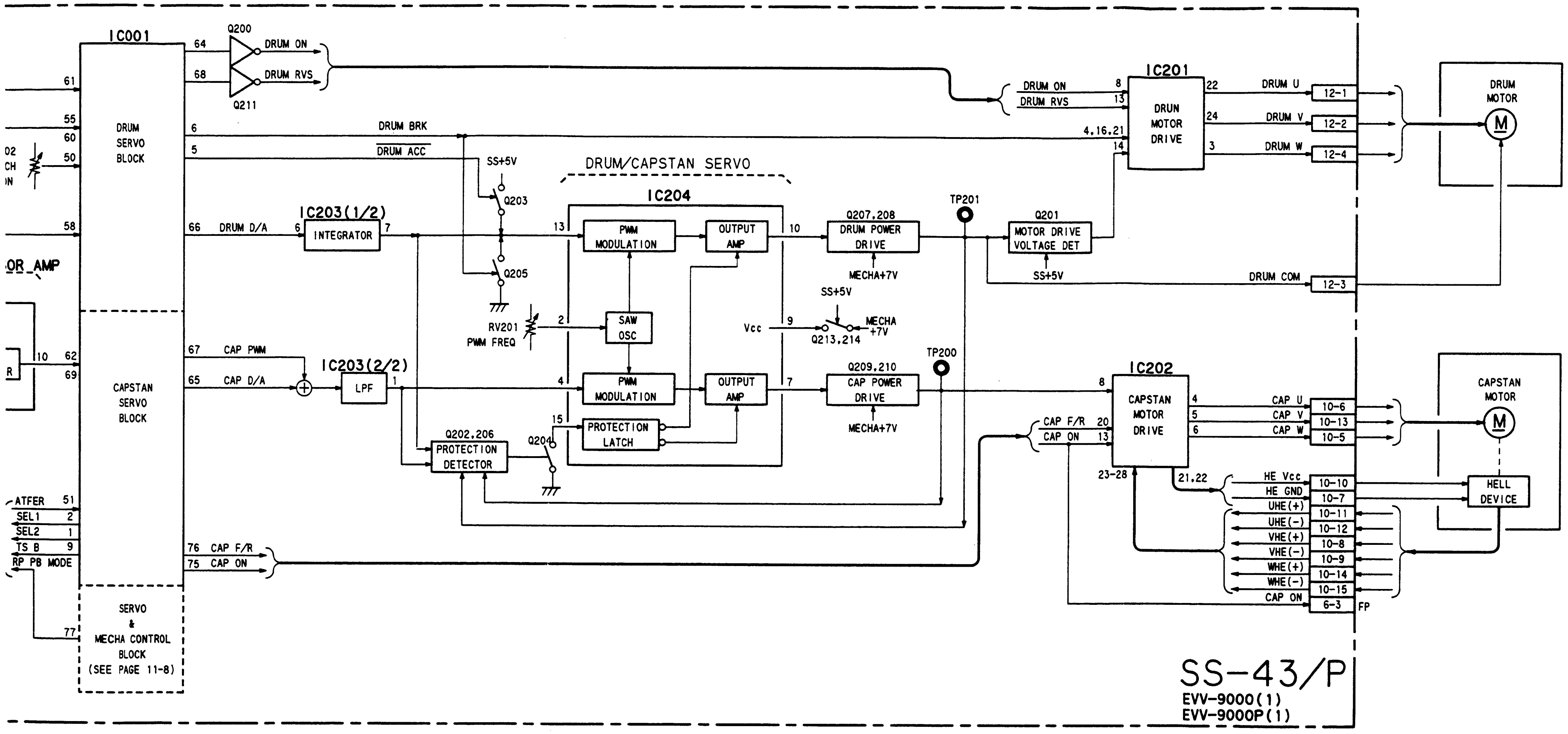

PCM AUDIO SIGNAL PROCESS
FP-37
REC PCM1
REC PCM2
RP
PB PCM RF
REC PCM RF
Q301-303 PB PCM RF AMP
Q308 REC PCM RF AMP
RV302 PB VCO
TP304
TP305
TP306
IC307 PCM RF SIGNAL PROCESSOR
FM DATA I/O
FM CLOCK
IC305
FM MOD/DEMOD
CRCC
PORT CONTROLLER
DATA INTERLEAVE MODE CONTROL
ID DATA PROCESS
ADDRESS BUS
DATA BUS
IC304 64K-BIT RAM
IC306
10→8 BIT EXPANSION 8→10 BIT COMPRESSION
ROM
PCM SYSTEM TIMING GENERATOR
PCM AREA MODE CS MT
PCM PB/REC RF SWP AF REC RESET
TP308
TP307
TP302
AD/DA DATA
WCK BCK
PCO
IC303 PCM MASTER CLOCK GENERATOR
TP303
MCK
RV301 MASTER CLOCK
X301 11.58MHz OSC
AREA RCHG MODE CSMT
FMCK I/O
FMDT I/O
SYSTEM SYNC
S REF
RF AREA
RF MODE
BUS SELECTOR
IC309
SO SI SCK
SO,SI,SCK
XCE
4.14.15
IC302 MULTI INDEX PROCESSOR
AREA MCK MODE
RFMD RFAR FERA FERS RAMP RAREA IEAR MDRA
IC301 SET
D302
MCK MODE CSMT
PCM AREA
MCK MODE AF REC
RAMP REC AREA
IEAR
OUT CONT SET A
WRITE RESET
PCM CS
FLY ERASE ON
DET WINDOW
IC308 PCM MICRO-COMPUTER
MODE R CHG RF SWP
BUS CONT
PCC SI PCC SO PCC SCK
XCE
AF REC MFERA MFERS
T3
PCM PB/REC
Q307
PCM REC MUTE
X302 4.19 MHz OSC
SCK PCM AREA T3 RF SWP
PCM ERROR RATE CHECK
VO-28/VO-32P
RF SW PULSE
RF SWP
VA PB MODE
Q208.209
RV201 PCM1 REC LEVEL
RV202 PCM2 REC LEVEL
RV205 PCM1 REC LEVEL
Q203 MUTE
PCM REC MUTE
RV204 A/D CONV OFFSET (PCM1)
IC206 AD/DA CONVERTER
RV206 D/A CONV LEVEL
RV207 A/D CONV OFFSET (PCM2)
Q204 MUTE
RV208 PCM2 REC LEVEL
ANALOG PCM2
ANALOG PCM1
TP203
TP204
IC201
IC202
REC PB
FL201 LPF
FL202 LPF
Q306
Q201.202 REC/PB SWITCH
Q205.206
D203 MODE
AUDIO EE
REC AFM
RV101 REC AFM LVEL
AGC AMP
AUDIO MUTE
PB RF
FL101 1.5MHz BPF
Q106 RF AMP
FM DEMODULATOR
RF SWP
VA PB MO
H:PB
SP/LP
SEL 1 SEL 2 RP PB MODE TS 8

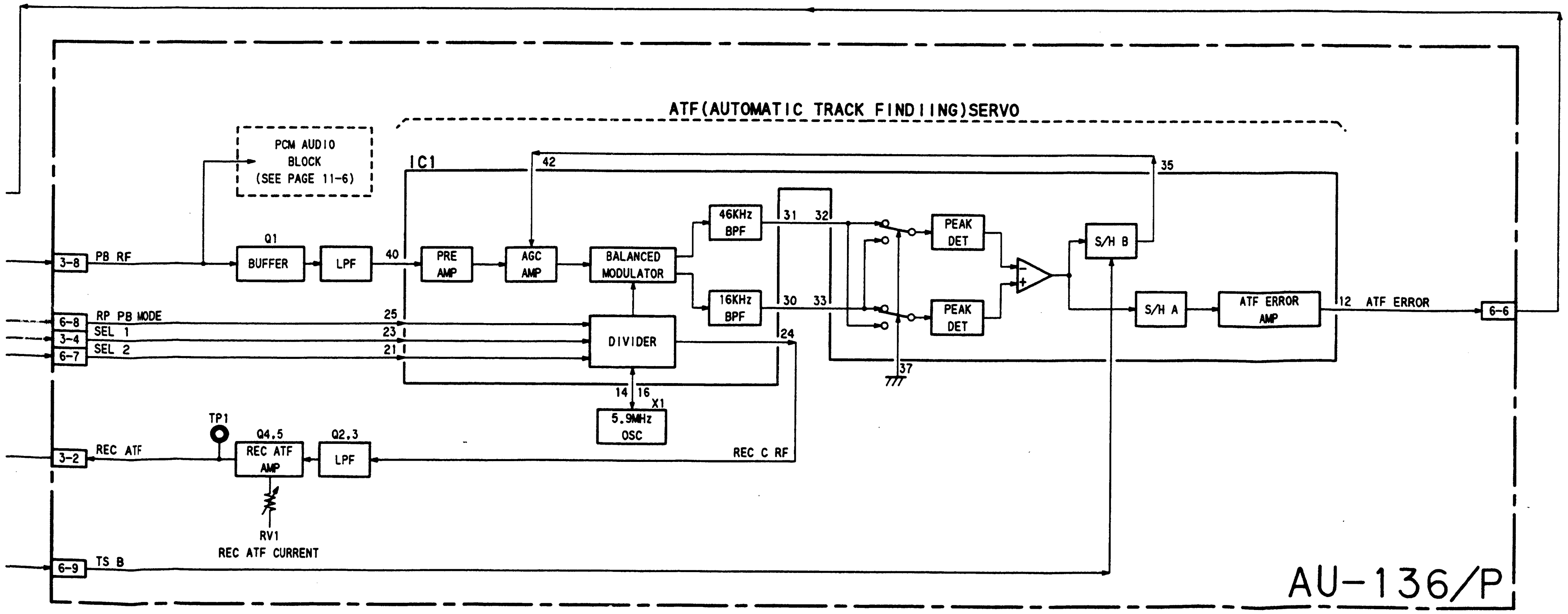

PCM AUDIO SIGNAL PROCESS
REC PCM 1
REC PCM 2
RV201 PCM1 REC LEVEL
RV202 PCM2 REC LEVEL
RV205 PCM1 REC LEVEL
Q203
MUTE
PCM REC MUTE
RV204 A/D CONV OFFSET (PCM1)
IC206
AD/DA CONVERTER
RV206 D/A CONV LEVEL
RV207 A/D CONV OFFSET (PCM2)
Q204
RV208 PCM2 REC LEVEL
ANALOG PCM2
ANALOG PCM1
DATA INTERLEAVE MODE CONTROL
ID DATA PROCESS
PCM AREA
MODE
CS MT
IC306
10 → 8 BIT EXPANSION
8 → 10 BIT COMPRESSION
REC
PB
ROM
PCM SYSTEM TIMING GENERATOR
PCM PB/REC
RF SWP
AF REC
RESET
TP308
TP307
TP302
AD/DA DATA
WCK
BCK
MCK
IC303
PCM MASTER CLOCK GENERATOR
TP303
PCO
X301
11.58MHz OSC
RV301 MASTER CLOCK
AREA
RCHG
MODE
CSMT
S REF
Q208,209
TP203
TP204
IC201
IC202
REC
PB
FL201
FL202
LPF
IC204(1/2)
IC205(1/2)
BUFFER(REC) APERTURE AMP (PB)
Q306
VA PB MODE
Q201,202
REC/PB SWITCH
Q205,206
IC203
PB PCM1 NOISE REDUCTION
PB PCM2 NOISE REDUCTION
RV203 NR DECODE LEVEL
TP201
TP202
IC207(1/2)
IC207(2/2)
OUTPUT AMP
Q210,211
GAIN SW
Q305
VA PB MODE
PB PCM1
PB PCM2
7-7
7-8
FP-37
D203
MODE
SCK
IC301
SET
42 RFMD
41 RFAR
40 FERA
39 FERS
12 RAMP
11 RAREA
46 IEAR
9 MDRA
D302
PCM AREA
MCK
MODE
CSMT
AF REC
RAMP
REC AREA
IEAR
OUT CONT
SET A
1-10
7-16
4-3
4-6
4-4
7-15
7-13
7-14
RP
FP-37
SCK
PCM AREA
T3
RF SWP
5-2
5-4
5-1
5-3
PCM ERROR RATE CHECK
IC101 AFM SIGNAL PROCESS
7-17 AUDIO EE
7-1 REC AFM
6-4 AUDIO MUTE
7-9
VO-28/VO-32P
RV101 REC AFM LVEL
AGC AMP
MUTE
5dB AMP
TP101
PB AFM RF
7-6
NOISE REDUCTION
EMPHASIS
MAIN OP AMP
HOLD
3-8 PB RF
FL101 1.5MHz BPF
Q106 RF AMP
FM DEMODULATOR
FM MODULATOR
SP/LP SW
H:PB
RF SWP
VA PB MODE
Q103,104 REC AFM AMP
TP102
RV102 REC AFM CURRENT
REC AFM RF
3-7
6-5 SP/LP
ATF SERVO BLOCK
(SEE PAGE 11-7)
REC ATF
ATF ERROR
3-2
6-6
3-4 SEL 1
6-7 SEL 2
6-8 RP PB MODE
6-9 TS 8

AU-136/P
EVV-9000(1)
EVV-9000P(1)

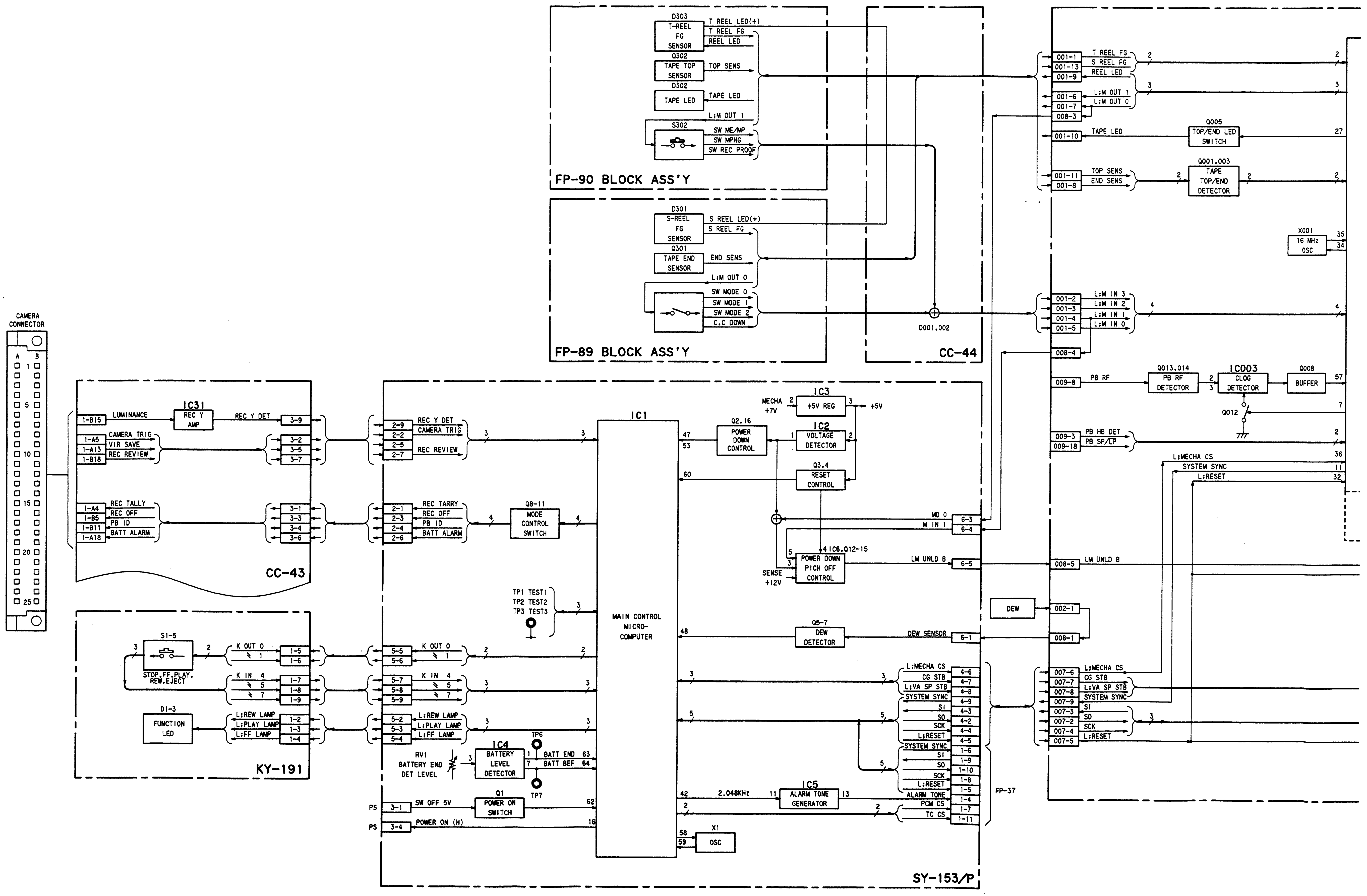
DRUM/CAPSTAN/ATF SERVO


DRUM MOTOR SENSOR AMP
IC200(1/2)
DRUM FG,PG
11-1 DRUM FG
11-2 DRUM PG
11-3 FGIPG COM
WAVE SHAPER
WAVE SHAPER
DC BIAS
RV002 SWITCH POSITION
IC001
DRUM SERVO BLOCK
Q200
Q211
DRUM ON
DRUM RVS
DRUM BRK
DRUM ACC
VO-28/VO-32P 9-15 COMPOSITE SYNC
CAPSTAN MOTOR SENSOR AMP
IC200(2/2)
RV200 CAPSTAN DUTY
CAPSTAN FG
10-3 CAPSTAN FG(+)
10-4 CAPSTAN FG(-)
FG AMP
WAVE SHAPER
Q212
FG AMP
CAPSTAN SERVO BLOCK
9-27 ATF ERROR
9-28 SEL1
9-29 SEL2
9-30 TS B
9-1 RP PB MODE
ATFER 51
SEL1 2
SEL2 1
TS B 9
RP PB MODE
SERVO & MECHA CONTROL BLOCK (SEE PAGE 11-8)
66 DRUM D/A
IC203(1/2)
INTEGRATOR
67 CAP PWM
65 CAP D/A
IC203(2/2)
LPF
76 CAP F/R
75 CAP ON
SS+5V
Q203
Q205
RV201 PWM FREQ
DRUM/CAPSTAN SERVO
IC204
PWM MODULATION
OUTPUT AMP
SAW OSC
PWM MODULATION
OUTPUT AMP
PROTECTION LATCH
Q202,206 PROTECTION DETECTOR
Q204
Vcc
Q207,208 DRUM POWER DRIVE
MECHA+7V
SS+5V
MECHA +7V
Q213,214
Q209,210 CAP POWER DRIVE
MECHA+7V
TP201
TP200
Q201 MOTOR DRIVE VOLTAGE DET
SS+5V
IC201
DRUM ON
DRUM RVS
DRUN MOTOR DRIVE
4,16,21
IC202
CAPSTAN MOTOR DRIVE
CAP F/R
CAP ON
23-28
21,22
SS-4
EVV-9000(1
EVV-9000P(
VO-28/32P
407-27 ATF ERROR
402-6
Q500
RP 405-10 PB VIDEO RF
BUFFER
401-8
407-1 RP PB MODE
407-28 SEL 1
407-29 SEL 2
402-8
401-4
402-7
Q455,456,460
RP 405-11 PB C RF
C/AFM/ATF MIX
401-2
REC C RF
REC AFM RF
407-30 TS B
402-9
PCM AUDIO BLOCK (SEE PAGE 11-6)
ATF(AUTOMATIC TRACK FINDIING)SERVO
IC1
3-8 PB RF
Q1 BUFFER
LPF
PRE AMP
AGC AMP
BALANCED MODULATOR
46KHz BPF
16KHz BPF
PEAK DET
PEAK DET
S/H B
S/H A
ATF ERROR AMP
12 ATF ERRO
6-8 RP PB MODE
3-4 SEL 1
6-7 SEL 2
DIVIDER
X1
5.9MHz OSC
TP1
3-2 REC ATF
Q4,5 REC ATF AMP
Q2,3 LPF
REC C RF
RV1 REC ATF CURRENT
6-9 TS B
AU-13

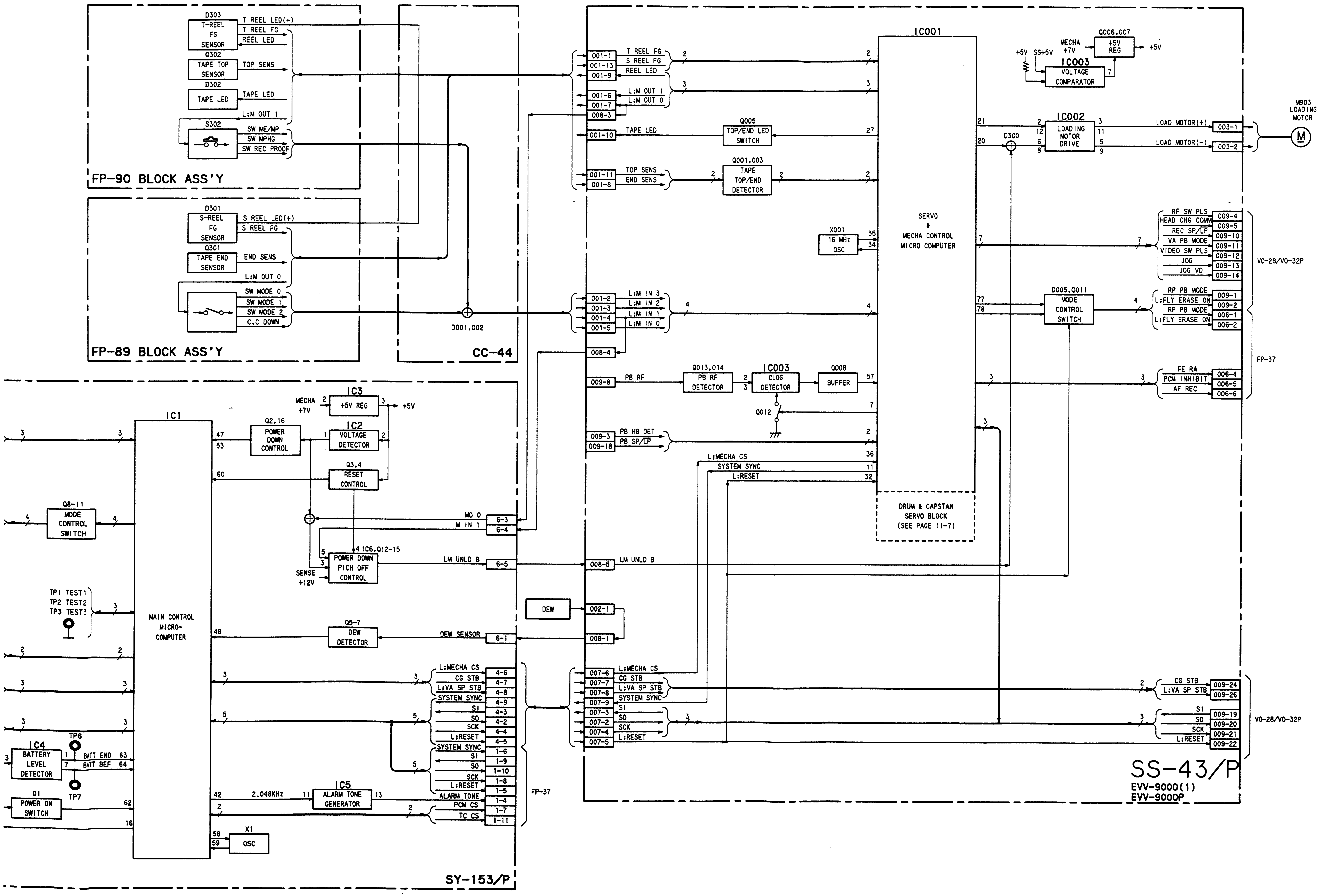

IC001
DRUM SERVO BLOCK
CAPSTAN SERVO BLOCK
SERVO & MECHA CONTROL BLOCK (SEE PAGE 11-8)
Q200
Q211
DRUM ON
DRUM RVS
DRUM BRK
DRUM ACC
DRUM D/A
CAP PWM
CAP D/A
CAP F/R
CAP ON
ATFER
SEL1
SEL2
TS B
RP PB MODE
IC203(1/2)
INTEGRATOR
IC203(2/2)
LPF
SS+5V
Q203
Q205
RV201 PWM FREQ
DRUM/CAPSTAN SERVO
IC204
PWM MODULATION
OUTPUT AMP
SAW OSC
PROTECTION LATCH
Q202,206
PROTECTION DETECTOR
Q204
Vcc
Q213,214
MECHA +7V
Q207,208
DRUM POWER DRIVE
MECHA+7V
Q209,210
CAP POWER DRIVE
TP201
TP200
Q201
MOTOR DRIVE VOLTAGE DET
IC201
DRUN MOTOR DRIVE
DRUM U
DRUM V
DRUM W
DRUM COM
12-1
12-2
12-4
12-3
DRUM MOTOR
M
IC202
CAPSTAN MOTOR DRIVE
CAP U
CAP V
CAP W
10-6
10-13
10-5
HE Vcc
HE GND
UHE(+)
UHE(-)
VHE(+)
VHE(-)
WHE(+)
WHE(-)
CAP ON
10-10
10-7
10-11
10-12
10-8
10-9
10-14
10-15
6-3
FP
CAPSTAN MOTOR
HELL DEVICE
SS-43/P
EVV-9000(1)
EVV-9000P(1)


ATF(AUTOMATIC TRACK FINDIING)SERVO
PCM AUDIO BLOCK (SEE PAGE 11-6)
IC1
3-8
PB RF
Q1
BUFFER
LPF
PRE AMP
AGC AMP
BALANCED MODULATOR
46KHz BPF
16KHz BPF
PEAK DET
S/H B
S/H A
ATF ERROR AMP
ATF ERROR
6-6
6-8
RP PB MODE
3-4
SEL 1
6-7
SEL 2
DIVIDER
5.9MHz OSC
X1
REC C RF
3-2
REC ATF
TP1
Q4,5
REC ATF AMP
Q2,3
LPF
RV1
REC ATF CURRENT
6-9
TS B
AU-136/P

REEL SERVO/MECHANISM CONTROL


CAMERA CONNECTOR
A B
1
5
10
15
20
25
CC-43
1-B15 LUMINANCE
IC31 REC Y AMP
REC Y DET
3-9
1-A5 CAMERA TRIG
1-A13 VIR SAVE
1-B18 REC REVIEW
3-2
3-5
3-7
1-A4 REC TALLY
1-B5 REC OFF
1-B11 PB ID
1-A18 BATT ALARM
3-1
3-3
3-4
3-6
KY-191
S1-5
STOP,FF,PLAY,REW,EJECT
K OUT 0
K IN 4
1-5
1-6
1-7
1-8
1-9
D1-3
FUNCTION LED
L:REW LAMP
L:PLAY LAMP
L:FF LAMP
1-2
1-3
1-4
FP-90 BLOCK ASS'Y
D303 T-REEL FG SENSOR
T REEL LED(+)
T REEL FG
REEL LED
Q302 TAPE TOP SENSOR
TOP SENS
D302 TAPE LED
TAPE LED
L:M OUT 1
S302
SW ME/MP
SW MPHG
SW REC PROOF
FP-89 BLOCK ASS'Y
D301 S-REEL FG SENSOR
S REEL LED(+)
S REEL FG
Q301 TAPE END SENSOR
END SENS
L:M OUT 0
SW MODE 0
SW MODE 1
SW MODE 2
C.C DOWN
CC-44
D001,002
SY-153/P
2-9 REC Y DET
2-2 CAMERA TRIG
2-5
2-7 REC REVIEW
2-1 REC TARRY
2-3 REC OFF
2-4 PB ID
2-6 BATT ALARM
Q8-11 MODE CONTROL SWITCH
TP1 TEST1
TP2 TEST2
TP3 TEST3
5-5 K OUT 0
5-6
5-7 K IN 4
5-8
5-9
5-2 L:REW LAMP
5-3 L:PLAY LAMP
5-4 L:FF LAMP
RV1 BATTERY END DET LEVEL
IC4 BATTERY LEVEL DETECTOR
TP6
TP7
BATT END 63
BATT BEF 64
PS 3-1 SW OFF 5V
PS 3-4 POWER ON (H)
Q1 POWER ON SWITCH
IC1
MAIN CONTROL MICRO-COMPUTER
MECHA +7V
IC3 +5V REG
+5V
Q2,16 POWER DOWN CONTROL
IC2 VOLTAGE DETECTOR
Q3,4 RESET CONTROL
MO 0
M IN 1
6-3
6-4
IC6,Q12-15
SENSE +12V
POWER DOWN PICH OFF CONTROL
LM UNLD B
6-5
Q5-7 DEW DETECTOR
DEW SENSOR
6-1
DEW
L:MECHA CS
CG STB
L:VA SP STB
SYSTEM SYNC
SI
SO
SCK
L:RESET
4-6
4-7
4-8
4-9
4-3
4-2
4-4
4-5
1-6
1-9
1-10
1-8
1-5
1-4
1-7
1-11
FP-37
IC5 ALARM TONE GENERATOR
ALARM TONE
PCM CS
TC CS
2.048KHz
X1 OSC
001-1 T REEL FG
001-13 S REEL FG
001-9 REEL LED
001-6 L:M OUT 1
001-7 L:M OUT 0
008-3
001-10 TAPE LED
Q005 TOP/END LED SWITCH
001-11 TOP SENS
001-8 END SENS
Q001,003 TAPE TOP/END DETECTOR
X001 16 MHz OSC
001-2 L:M IN 3
001-3 L:M IN 2
001-4 L:M IN 1
001-5 L:M IN 0
008-4
009-8 PB RF
Q013,014 PB RF DETECTOR
IC003 CLOG DETECTOR
Q008 BUFFER
Q012
009-3 PB HB DET
009-18 PB SP/LP
L:MECHA CS
SYSTEM SYNC
L:RESET
008-5 LM UNLD B
002-1
008-1
007-6 L:MECHA CS
007-7 CG STB
007-8 L:VA SP STB
007-9 SYSTEM SYNC
007-3 SI
007-2 SO
007-4 SCK
007-5 L:RESET

REEL SERVO/MECHANISM CONTROL


D303
T-REEL FG SENSOR
T REEL LED(+)
T REEL FG
REEL LED
Q302
TAPE TOP SENSOR
TOP SENS
D302
TAPE LED
L:M OUT 1
S302
SW ME/MP
SW MPHG
SW REC PROOF
FP-90 BLOCK ASS'Y
D301
S-REEL FG SENSOR
S REEL LED(+)
S REEL FG
Q301
TAPE END SENSOR
END SENS
L:M OUT 0
SW MODE 0
SW MODE 1
SW MODE 2
C.C DOWN
FP-89 BLOCK ASS'Y
D001.002
CC-44
001-1
001-13
001-9
T REEL FG
S REEL FG
REEL LED
001-6
001-7
008-3
L:M OUT 1
L:M OUT 0
001-10
TAPE LED
Q005
TOP/END LED SWITCH
001-11
001-8
TOP SENS
END SENS
Q001.003
TAPE TOP/END DETECTOR
IC001
SERVO & MECHA CONTROL MICRO COMPUTER
X001
16 MHz OSC
MECHA +7V
Q006.007
+5V REG
+5V
SS+5V
IC003
VOLTAGE COMPARATOR
IC002
LOADING MOTOR DRIVE
D300
LOAD MOTOR(+)
LOAD MOTOR(−)
003-1
003-2
M903
LOADING MOTOR
M
RF SW PLS
HEAD CHG COMM
REC SP/LP
VA PB MODE
VIDEO SW PLS
JOG
JOG VD
009-4
009-5
009-10
009-11
009-12
009-13
009-14
VO-28/VO-32P
001-2
001-3
001-4
001-5
L:M IN 3
L:M IN 2
L:M IN 1
L:M IN 0
D005.Q011
MODE CONTROL SWITCH
RP PB MODE
L:FLY ERASE ON
009-1
009-2
006-1
006-2
FP-37
008-4
009-8
PB RF
Q013.014
PB RF DETECTOR
IC003
CLOG DETECTOR
Q008
BUFFER
Q012
FE RA
PCM INHIBIT
AF REC
006-4
006-5
006-6
009-3
009-18
PB HB DET
PB SP/LP
L:MECHA CS
SYSTEM SYNC
L:RESET
DRUM & CAPSTAN SERVO BLOCK (SEE PAGE 11-7)
IC3
+5V REG
IC1
Q2.16
POWER DOWN CONTROL
IC2
VOLTAGE DETECTOR
Q3.4
RESET CONTROL
Q8-11
MODE CONTROL SWITCH
MO 0
M IN 1
6-3
6-4
IC6.Q12-15
POWER DOWN PICH OFF CONTROL
SENSE +12V
LM UNLD B
6-5
008-5
DEW
002-1
008-1
TP1 TEST1
TP2 TEST2
TP3 TEST3
MAIN CONTROL MICRO-COMPUTER
Q5-7
DEW DETECTOR
DEW SENSOR
6-1
L:MECHA CS
CG STB
L:VA SP STB
SYSTEM SYNC
SI
SO
SCK
L:RESET
4-6
4-7
4-8
4-9
4-3
4-2
4-4
4-5
1-6
1-9
1-10
1-8
1-5
1-4
1-7
1-11
ALARM TONE
PCM CS
TC CS
007-6
007-7
007-8
007-9
007-3
007-2
007-4
007-5
009-24
009-26
009-19
009-20
009-21
009-22
IC4
BATTERY LEVEL DETECTOR
TP6
TP7
BATT END
BATT BEF
Q1
POWER ON SWITCH
IC5
ALARM TONE GENERATOR
2.048KHz
X1
OSC
SY-153/P
SS-43/P
EVV-9000(1)
EVV-9000P

11-8

SECTION 12
SEMICONDUCTOR PIN ASSIGNMENT

ICs, transistors and diodes whoses functions are equivalent are described here. Therefore, incompatible device names may be described together. For parts replacement, refer to the Spare Parts section in this manual.

IC	PAGE
BA401	12-3
CF77309FR	12-3
CX20032	12-3
CX20099	12-4
CX20102	12-4
CX20103	12-4
CX20114	12-5
CX20115A	12-4
CX20117	12-5
CX22021	12-7
CX23011	12-6
CX23012	12-7
CX23054	12-8
CXA1047M	12-8
CXA1127M	12-9
CXA1204Q	12-9
CXA1230AR	12-10
CXA1231AR	12-10
CXA1234AR	12-11
CXD1066Q	12-12
CXD1077M	12-13
CXK5864BM-12L	12-13
CXP5078	12-14
CXP80116Q	12-15
LB1631M	12-16
LM2903M	12-16
LM358M	12-16
M5201FP	12-17
MB3775PF	12-17
MC14013BF	12-17
MC14053BF	12-17
MC14094BF	12-17
NJM2230M	12-18
NJM2233AM	12-18
NJM2234M	12-18
NJM2235M	12-18
NJM386M	12-18

IC	PAGE
RC4558M	12-18
RC4560M	12-18
SBX1505-21	12-19
S-8054ALR-LN	12-19
S-81230AG-RB	12-19
S-81250HG-RD	12-19
TA8607F	12-20
TL082CPS	12-20
TL1451ACNS	12-20
TL431CPS	12-20
UPC358G2	12-20
UPC393G2	12-16
UPC4558G2	12-18
UPC4572G2	12-21
UPD4053BG	12-17
UPD6145G	12-21
UPD75P516GF	12-21

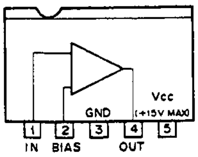
TRANSISTOR	PAGE
2SA1122	12-22
2SA1175	12-22
2SA1226	12-22
2SA1242	12-22
2SA1576	12-22
2SA1611	12-22
2SA812	12-22
2SB1040A	12-22
2SB1121	12-22
2SB1123	12-22
2SB624	12-22
2SC1623	12-22
2SC2223	12-22
2SC2712	12-22
2SC2712Y	12-22
2SC2715	12-22
2SC3326N	12-22
2SC3356	12-22
2SC4081	12-22
2SC4175	12-22
2SC4177	12-22
2SK94	12-22
DTA114EK	12-22
DTA124EU	12-22
DTA143EU	12-22
DTA144EK	12-22
DTA144EU	12-22
DTC114EU	12-22
DTC114YK	12-22
DTC124EU	12-22
DTC124XK	12-22
DTC144EK	12-22
DTC144EU	12-22
FMW1	12-22
FMW2	12-22

The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

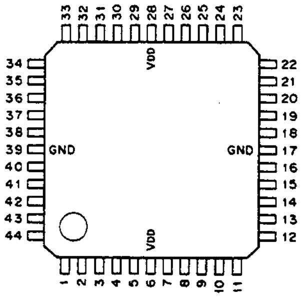
SEMICONDUCTOR INDEX

DIODE	PAGE
1S2835	12-22
1S2837	12-22
1SS119	12-22
1SS123	12-22
1SS196	12-22
1SS303	12-22
1SS304	12-22
1T32-8	12-22
DAP202	12-22
DAP202U	12-22
EBR3402S	12-22
ERA81-004	12-23
ERB81-004	12-23
GL-1HD1	12-23
RD15ESL	12-23
RD2.4MB	12-23
RD8.2ESL	12-23
SB05-05CP	12-23
SLH-34YT3	12-23
TLUR164	12-22

BA401 (ROHM)
RF AMPLIFIER
– SIDE VIEW –


Vcc
(+15V MAX)
GND
1
2
3
4
5
IN
BIAS
OUT

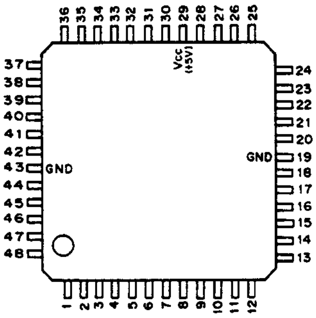
CF77309FR (TI)
C-MOS TIMING GENERATOR FOR 8mm VTR ADDRESS SYSTEM
– TOP VIEW –


VDD
GND
GND
VDD

(V_{DD} = + 5V)

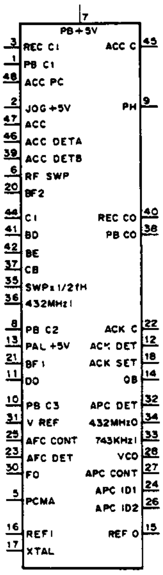
PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGANL	PIN NO.	I/O	SYGNAL	PIN NO.	I/O	SYGNAL
1	I	IEAR	12	I	CSMT	23	O	LCLK	34	I	RAMP
2	O	SIEAR	13	I	CRCMON1	24	O	SW POS	35	O	S RAMP
3	I	RFMDZ	14	I	FMCK	25	I	CAM/$\overline{\text{DECK}}$	36	I	RAREA
4	O	S RFMD	15	I	P1/$\overline{\text{P2}}$	26	I	MODE	37	O	S RARE
5	I	RFAR	16	I	AUTO	27	I	WRITE	38	I	DRSWP
6	–	V_{DD}	17	–	GND	28	–	V_{DD}	39	–	GND
7	O	S RFAR	18	I	MCLK1	29	I	$\overline{\text{RESET}}$	40	O	S DRSWP
8	I	FERA	19	O	MCLK2	30	I	RFSWP	41	I	MDAR
9	O	S FERA	20	I	SREF	31	O	OUT CNT	42	O	S MDAR
10	I	FERS	21	O	PCO	32	O	$\overline{\text{SET 1}}$	43	I	TEST 1
11	O	S FERS	22	I	NTSC/$\overline{\text{PAL}}$	33	O	SET1010	44	I	TEST 2

CX20032 (SONY)
CHROMA SIGNAL PROCESSOR FOR VTR
– TOP VIEW –


Vcc
(+5V)
GND
GND

(V_{DD} = + 5V)

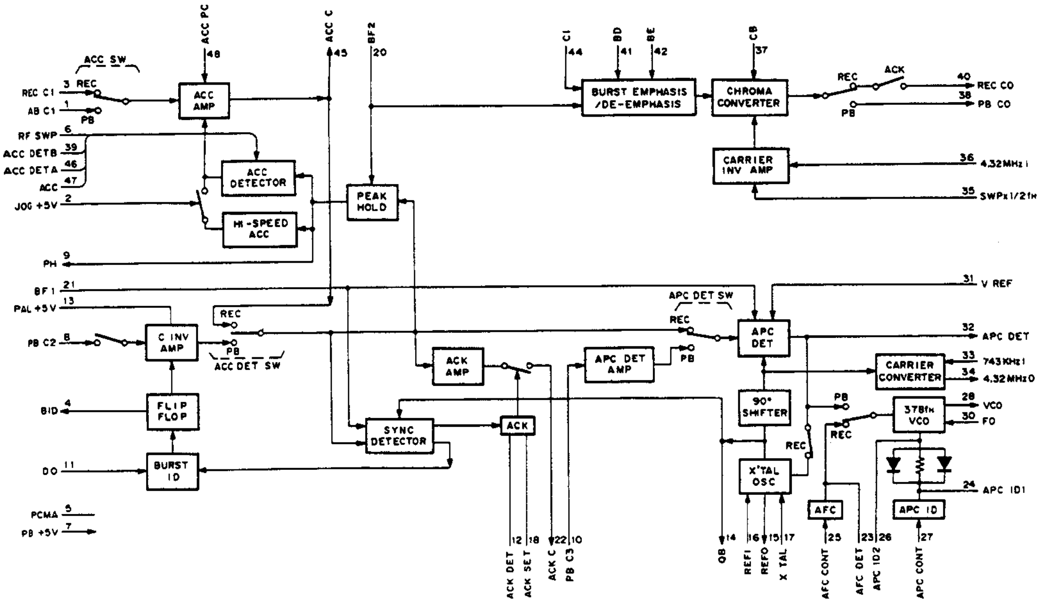
PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGANL	PIN NO.	I/O	SYGNAL	PIN NO.	I/O	SYGNAL
1	I	PB C1	13	I	PAL +5V	25	I	AFC CONT	37	I	CB
2	I	JOG +5V	14	O	QB	26	I	APC ID2	38	O	PB CO
3	I	REC CI	15	O	REFO	27	I	APC CONT	39	I	ACC DETB
4	O	BID	16	I	REFI	28	O	VCO	40	O	REC CO
5	–	PCMA	17	I	XTAL	29	–	Vcc	41	I	BD
6	I	RF SWP	18	I	ACK SET	30	I	F0	42	I	BE
7	I	PB +5V	19	–	GND	31	I	V_{REF}	43	–	GND
8	I	PB C2	20	I	BF2	32	O	APC DET	44	I	CI
9	O	PH	21	I	BF1	33	I	743KHzI	45	O	ACC C
10	I	PB C3	22	O	ACK C	34	O	4.32MHzO	46	I	ACC DETA
11	I	D0	23	I	AFC DET	35	I	SWPx1/2fH	47	I	ACC
12	I	ACK DET	24	I	APC ID1	36	I	4.32MHzI	48	I	ACC PC


7 PB+5V
3 REC CI
1 PB CI
48 ACC PC
2 JOG+5V
47 ACC
46 ACC DETA
39 ACC DETB
6 RF SWP
20 BF2
44 CI
41 BD
42 BE
37 CB
35 SWPx1/2fH
36 432MHzI
8 PB C2
13 PAL +5V
21 BF I
11 DO
10 PB C3
31 V REF
25 AFC CONT
23 AFC DET
30 FO
5 PCMA
16 REFI
17 XTAL
ACC C 45
PH 9
REC CO 40
PB CO 38
ACK C 22
ACK DET 12
ACK SET 18
QB 14
APC DET 32
432MHzO 34
743KHzI 33
VCO 28
APC CONT 27
APC ID1 24
APC ID2 26
REF O 15

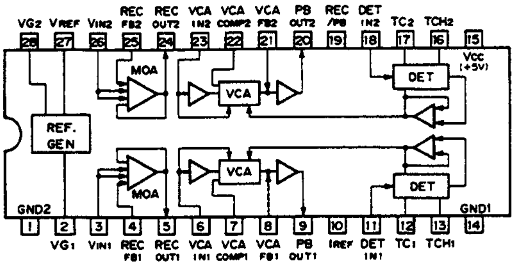
INPUT
4.32MHz : 4.32MHz BAND PASS FILTER
743KHz : VCO OUTPUT FREQUENCY DIVIDED BY 8
ACC : ACC OUTPUT LEVEL ADJUSTMENT
ACC DET A, B : ACC DETECTOR TIME CONSTANT
ACC PC : DE-COUPLING CAPACITOR FOR ACC AMP
ACK DET : ACK DETECTOR TIME CONSTANT
ACK SET : ACK LEVEL SET ADJUSTMENT
AFC CON : AFC ERROR VOLTAGE
AFC DET : AFC TIME CONSTANT
APC CON : APC ID ERROR VOLTAGE
APC ID1, 2 : APC ID TIME CONSTANT
BD : BURST DE-EMPHASIS ADJUSTMENT
B : BURST EMPHASIS ADJUSTMENT
BF1, 2 : BURST FLAG
CB : CARRIER BALANCE ADJUSTMENT
CI : CHROMA
DO : DROPOUT
FO : VCO CENTER FREQUENCY ADJUSTMENT
JOG + 5 : PB MODE SWITCH (H : JOG/L : NORMAL)
PAL + 5 : CHROMA INVERTED AMP CONTROL
(PAL : NONINVERTED)
PB + 5V : REC/PB MODE SWITCH (H : PB/L : REC)
PB C1 : PB CHROMA S
PBC2, 3 : HIGH FREQUENCY CONVERTED PB
CHROMA SIGNAL FOR CHROMA INVERT AMP
ACC/ACK/APC DETECTOR
REC CI : REC CHROMA S
REFI : CRYSTAL OSC REFERENCE
RF SWP : RF SWITCHING PULSE
SWPx1/2fH : PHASE INPUT SIGNAL
V_{REF} : REFERENCE VOLTAGE FOR APC DETECTOR
XTAL : CRYSTAL OSC

OUTPUT
4.32MHzO : 4.32MHz CARRIER
ACC C : ACC CHROMA
ACK C : ACK CHROMA
APC DET : APC DETECTOR ERROR
BID : BURST ID
PB CO : BURST DE-EMPHASIS AND
HIGH FREQUENCY CONVERTED PB CHROMA
PH : PEAK HOLD BURST LEVEL
QB : CRYSTAL OSC
REC CO : BURST EMPHASIS AND
HIGH FREQUENCYCONVERTED REC CHROMA
REFO : CRYSTAL OSC REFERENCE
VCO : 378fH VCO

OTHER
PCMA : PCM AFTER RECORDING

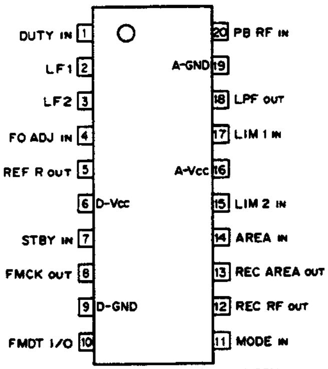

ACC PC
ACC C
BF2
CI
BD
BE
CB
ACC SW
REC CI
AB CI
RF SWP
ACC DETB
ACC DETA
ACC
JOG +5V
PH
BF I
PAL +5V
PB C2
BID
DO
PCMA
PB +5V
REC
PB
ACC AMP
ACC DETECTOR
HI-SPEED ACC
PEAK HOLD
C INV AMP
ACC DET SW
FLIP FLOP
BURST ID
SYNC DETECTOR
ACK AMP
ACK
APC DET AMP
APC DET SW
APC DET
90° SHIFTER
X'TAL OSC
AFC
BURST EMPHASIS /DE-EMPHASIS
CHROMA CONVERTER
CARRIER INV AMP
CARRIER CONVERTER
378fH VCO
APC ID
ACK
REC CO
PB CO
4.32MHzI
SWPx1/2fH
V REF
APC DET
743KHzI
4.32MHzO
VCO
FO
APC ID1
ACK DET
ACK SET
ACK C
PB C3
QB
REFI
REFO
X TAL
AFC CONT
AFC DET
APC ID2
APC CONT

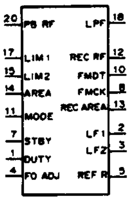
CX20099 (SONY) FLAT PACKAGE
VOLTAGE CONTROLLED AMP/DETECTOR/MAIN OPERATIONAL AMP
— TOP VIEW —


VG2
VREF
VIN2
REC FB2
REC OUT2
VCA IN2
VCA COMP2
VCA FB2
PB OUT2
REC /PB
DET IN2
TC2
TCH2
28
27
26
25
24
23
22
21
20
19
18
17
16
15
Vcc (+5V)
MOA
VCA
DET
REF. GEN
MOA
VCA
DET
GND2
GND1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
VG1
VIN1
REC FB1
REC OUT1
VCA IN1
VCA COMP1
VCA FB1
PB OUT1
IREF
DET IN1
TC1
TCH1

DET ; DETECTOR
TC ; TIME CONSTANT
TCH ; TIME CONSTANT HOLD
VCA ; VOLTAGE CONTROLLED AMP

CX20102 (SONY) FLAT PACKAGE
PCM-RF SIGNAL PROCESSOR
- TOP VIEW -


DUTY IN 1
LF1 2
LF2 3
FO ADJ IN 4
REF R OUT 5
6 D-Vcc
STBY IN 7
FMCK OUT 8
9 D-GND
FMDT I/O 10
20 PB RF IN
A-GND 19
18 LPF OUT
17 LIM 1 IN
A-Vcc 16
15 LIM 2 IN
14 AREA IN
13 REC AREA OUT
12 REC RF OUT
11 MODE IN


20 PB RF
LPF 18
17 LIM 1
REC RF 12
15 LIM 2
FMDT 10
14 AREA
FMCK 8
11 MODE
REC AREA 13
7 STBY
LF1 2
1 DUTY
LF2 3
4 FO ADJ
REF R 5

A-Vcc=D-Vcc= +4.75 to +5.25V

A — Vcc = D — Vcc = + 4.75 to + 5.25V

INPUT			OPERATION
STBY	MODE	AREA	
0	X	X	POWER SAVE
1	1	X	PB
1	0	1	REC
1	0	0	REC STANDBY

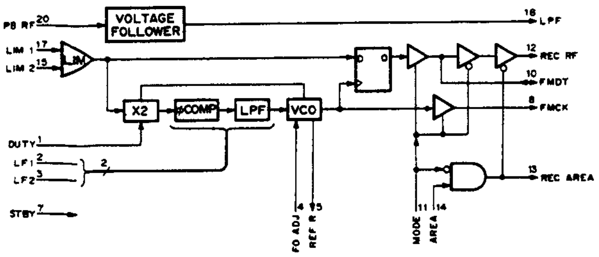
0 : LOW LEVEL
1 : HIGH LEVEL
X : DONT CARE

INPUT
AREA : AREA INPUT (C MOS LEVEL)
DUTY : SAMPLING PHASE FINE ADJUSTMENT
F0 ADJ : VCO FREE RUN FREQUENCY ADJUSTMENT
LIM 1, 2 : LIMITER INPUT
MODE : REC/PB SELECTOR (C MOS LEVEL)
PB RF : VOLTAGE FOLLOWER INPUT
STBY : POWER SAVE CONTROL INPUT
L : STAND BY (C MOS LEVEL)

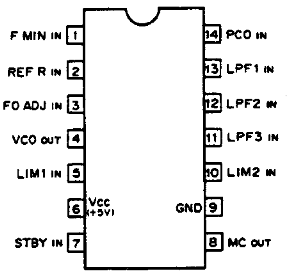
OUTPUT
FMCK : CLOCK OUTPUT
LPF : VOLTAGE FOLLOWER OUTPUT
REC AREA : REC AREA OUTPUT (C MOS LEVEL)
REC RF : REC MODE RF OUTPUT (C MOS LEVEL)
REF R : RESISTOR EXTERNAL ATTACHED VCO

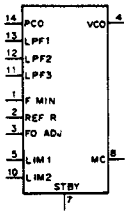
INPUT/OUTPUT
FMDT : DATA INPUT/OUTPUT

OTHER
LF1, 2 : EXTERNAL LOOP FILTER TIME CONSTANT


PB RF 20
VOLTAGE FOLLOWER
18 LPF
LIM 1 17
LIM 2 15
LIM
D
Q
12 REC RF
10 FMDT
8 FMCK
X2
φCOMP
LPF
VCO
DUTY 1
LF1 2
LF2 3
2
STBY 7
13 REC AREA
4 FO ADJ
5 REF R
11 MODE
14 AREA

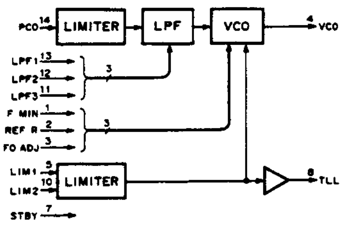
CX20103 (SONY) FLAT PACKAGE
PCM MASTER CLOCK GENERATOR
- TOP VIEW -


F MIN IN 1
REF R IN 2
FO ADJ IN 3
VCO OUT 4
LIM1 IN 5
6 Vcc (+5V)
STBY IN 7
14 PCO IN
13 LPF1 IN
12 LPF2 IN
11 LPF3 IN
10 LIM2 IN
GND 9
8 MC OUT

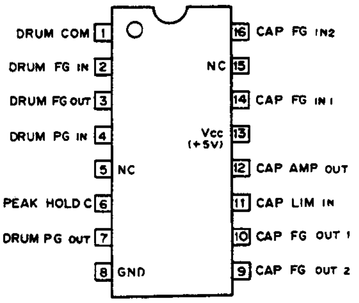

14 PCO
VCO 4
13 LPF1
12 LPF2
11 LPF3
1 F MIN
2 REF R
3 FO ADJ
5 LIM1
MC 8
10 LIM2
STBY
7

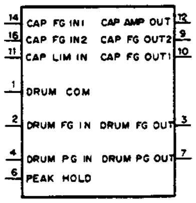
INPUT
FO ADJ : OSCILLATION FREQUENCY ADJUST
F MIN : MINIMUM OSCILLATION FREQUENCY SET
LIM1, 2 : LIMITER INPUT 1, 2
LPF1 — 3 : LOW PASS FILTER 1 — 3
PCO : ERROR SIGNAL INPUT
REF R : REFERENCE RESISTOR
STBY : SWITCH (L : STANDBY/H : ACTIVE)

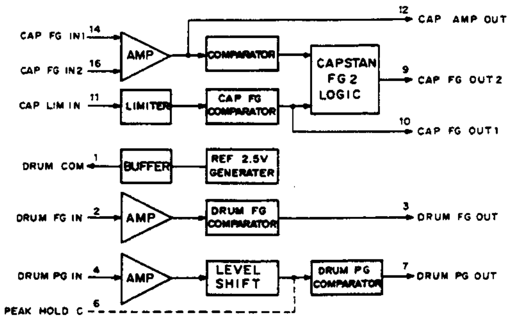
OUTPUT
MC : MASTER CLOCK
VCO : PHASE SHIFTER


PCO 14
LIMITER
LPF
VCO
4 VCO
LPF1 13
LPF2 12
LPF3 11
3
F MIN 1
REF R 2
FO ADJ 3
3
LIM1 5
LIM2 10
LIMITER
8 TLL
STBY 7

CX20115A (SONY) FLAT PACKAGE
MOTOR SENSE AMP
- TOP VIEW -

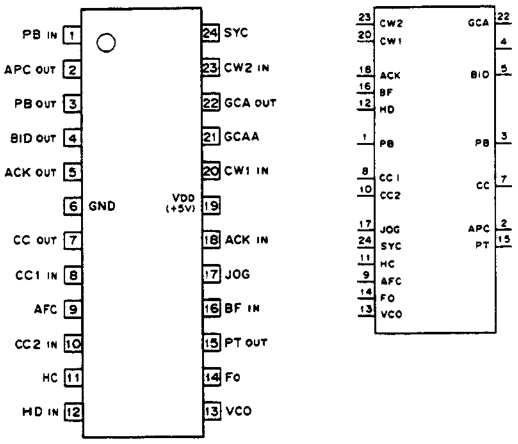

DRUM COM 1
DRUM FG IN 2
DRUM FG OUT 3
DRUM PG IN 4
5 NC
PEAK HOLD C 6
DRUM PG OUT 7
8 GND
16 CAP FG IN2
NC 15
14 CAP FG IN1
Vcc (+5V) 13
12 CAP AMP OUT
11 CAP LIM IN
10 CAP FG OUT 1
9 CAP FG OUT 2


14 CAP FG IN1
CAP AMP OUT 12
16 CAP FG IN2
CAP FG OUT2 9
11 CAP LIM IN
CAP FG OUT1 10
1 DRUM COM
2 DRUM FG IN
DRUM FG OUT 3
4 DRUM PG IN
DRUM PG OUT 7
6 PEAK HOLD


12 CAP AMP OUT
CAP FG IN1 14
CAP FG IN2 16
AMP
COMPARATOR
CAPSTAN FG 2 LOGIC
9 CAP FG OUT2
CAP LIM IN 11
LIMITER
CAP FG COMPARATOR
10 CAP FG OUT1
DRUM COM 1
BUFFER
REF 2.5V GENERATER
DRUM FG IN 2
AMP
DRUM FG COMPARATOR
3 DRUM FG OUT
DRUM PG IN 4
AMP
LEVEL SHIFT
DRUM PG COMPARATOR
7 DRUM PG OUT
PEAK HOLD C 6

CX20117 (SONY) FLAT PACKAGE

C-MOS PAL-COLOR ALIGNMENT COMPENSATOR
– TOP VIEW –


PB IN 1
APC OUT 2
PB OUT 3
BID OUT 4
ACK OUT 5
6 GND
CC OUT 7
CC1 IN 8
AFC 9
CC2 IN 10
HC 11
HD IN 12
13 VCO
14 Fo
15 PT OUT
16 BF IN
17 JOG
18 ACK IN
VDD (+5V) 19
20 CW1 IN
21 GCAA
22 GCA OUT
23 CW2 IN
24 SYC
CW2
CW1
ACK
BF
HD
PB
CC1
CC2
JOG
SYC
HC
AFC
FO
VCO
GCA
BID
PB
CC
APC
PT

INPUT

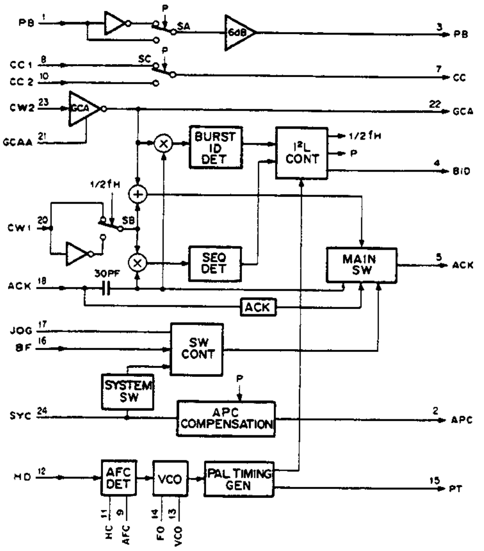
ACK	: ACK CHROMA SIGNAL
BF	: BURST FLAG
CW1	: 4.43 MHz (REF – 90°)
CW2	: REF 4.43 MHz
HD	: HORIZONTAL DRIVE
PB	: PLAYBACK CHROMA SIGNAL
CC1	: CONVERTED CARRIER (3.70 MHz)
CC2	: CONVERTED CARRIER (5.17 MHz)

OTHERS

AFC	: AFC LPF
GCAA	: REF AMP GAIN ADJ
Fo	: VCO FREQUENCY ADJ
HC	: HOLD CAPACITOR
JOG	: REC/PB/JOG SELECT
SYC	: SYSTEM CONTROL
VCO	: VCO CAPACITOR

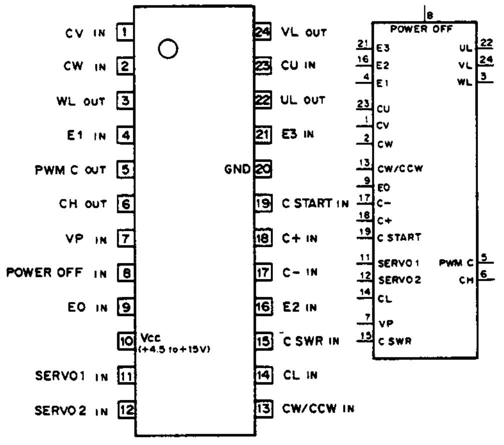
OUTPUT

ACK	: ACK CHROMA SIGNAL
APC	: APC COMPENSATION
BID	: BURST ID
GCA	: REF (4.43 MHz) AMP
PB	: PLAYBACK CHROMA SIGNAL
PT	: PAL TIMING
CC	: CONDERTED CARRIER OTHERS


PB 1
P
SA
6dB
3 PB
CC1 8
CC2 10
SC
P
7 CC
CW2 23
GCA
22 GCA
GCAA 21
BURST ID DET
I²L CONT
1/2fH
P
4 BID
1/2fH
CW1 20
SB
SEQ DET
MAIN SW
5 ACK
ACK 18
30PF
ACK
JOG 17
BF 16
SW CONT
SYSTEM SW
P
SYC 24
APC COMPENSATION
2 APC
HD 12
AFC DET
VCO
PAL TIMING GEN
15 PT
11 HC
9 AFC
14 FO
13 VCO

CX20114 (SONY) FLAT PACKAGE

3-PHASE BRUSHLESS DRUM MOTOR DRIVER
– TOP VIEW –

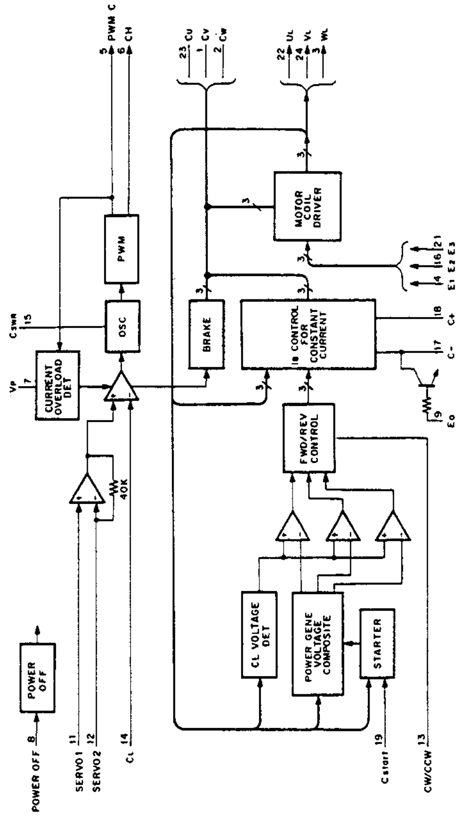

CV IN 1
CW IN 2
WL OUT 3
E1 IN 4
PWM C OUT 5
CH OUT 6
VP IN 7
POWER OFF IN 8
EO IN 9
10 Vcc (+4.5 to+15V)
SERVO1 IN 11
SERVO2 IN 12
13 CW/CCW IN
14 CL IN
15 C SWR IN
16 E2 IN
17 C– IN
18 C+ IN
19 C START IN
GND 20
21 E3 IN
22 UL OUT
23 CU IN
24 VL OUT
8 POWER OFF
21 E3
16 E2
4 E1
23 CU
1 CV
2 CW
13 CW/CCW
9 EO
17 C–
18 C+
19 C START
11 SERVO1
12 SERVO2
14 CL
7 VP
15 C SWR
UL 22
VL 24
WL 3
PWM C 5
CH 6

INPUT

C –, C +	: ELECTROMAGNETIC NOISE REDUCTION AND CONSTANT CURRENT
CL	: MOTER DRIVE VOLTAGE DETECT
C START	: MOTOR START UP CIRCUIT OSC
C SWR	: SAWTOOTH WAVE OSC FREQUENCY
CU, CV, CW	: 3-PHASE PREVENTING SWITCHING SPIKE AND RING OSC
CW/CCW	: FORWARD/REVERSE CONTROL
EO	: POWER OFF PROTECT
E1, E2, E3	: 3-PHASE STEP DRIVE
POWER OFF	: OPEN OR GND TO SAVE POWER
SERVO1	: SERVO INPUT AMP NONINVERT INPUT
SERVO2	: SERVO INPUT AMP INVERT INPUT
VP	: CURRENT OVERLOAD DETECT

OUTPUT

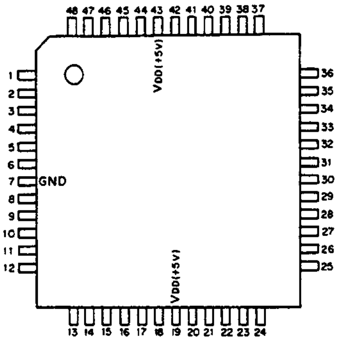
CH	: PWM (PULSE WIDTH MODULATOR)
PWM C	: PWM POWER COLLECTOR
UL, VL, WL	: 3-PHASE MOTOR COIL DRIVE


5 PWM C
6 CH
23 CU
1 CV
2 CW
22 UL
24 VL
3 WL
PWM
MOTOR COIL DRIVER
3
21 E3
16 E2
4 E1
C SWR 15
OSC
BRAKE
CONTROL FOR CONSTANT CURRENT
18 C+
17 C–
VP 7
CURRENT OVERLOAD DET
9 EO
FWD/REV CONTROL
40K
CL VOLTAGE DET
POWER GENE VOLTAGE COMPOSITE
STARTER
POWER OFF
POWER OFF 8
SERVO1 11
SERVO2 12
CL 14
Cstart 19
CW/CCW 13

CX23011 (SONY) FLAT PACKAGE

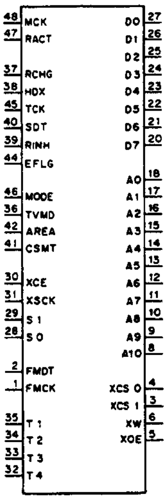
C-MOS PCM AUDIO SIGNAL PROCESSOR

– TOP VIEW –


48 47 46 45 44 43 42 41 40 39 38 37
1
2
3
4
5
6
7 GND
8
9
10
11
12
VDD(+5V)
36
35
34
33
32
31
30
29
28
27
26
25
VDD(+5V)
13 14 15 16 17 18 19 20 21 22 23 24

(VDD = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I/O	FMCK	25	I/O	D2
2	I/O	FMDT	26	I/O	D1
3	O	XCS1	27	I/O	D0
4	O	XCS0	28	O	S0
5	O	XOE	29	I/O	S1
6	O	XW	30	I/O	XCE
7	–	GND	31	I/O	XSCK
8	O	A10	32	I	T4
9	O	A9	33	I	T3
10	O	A8	34	I	T2
11	O	A7	35	I	T1
12	O	A6	36	I	TVMD
13	O	A5	37	I	RCHG
14	O	A4	38	I	HDX
15	O	A3	39	I/O	RINH
16	O	A2	40	I/O	SDT
17	O	A1	41	I/O	CSMT
18	O	A0	42	I	AREA
19	–	VDD	43	–	VDD
20	I/O	D7	44	O	EFLG
21	I/O	D6	45	I	TCK
22	I/O	D5	46	I	MODE
23	I/O	D4	47	I	RACT
24	I/O	D3	48	I	MCK


48 MCK
47 RACT
37 RCHG
38 HDX
45 TCK
40 SDT
39 RINH
44 EFLG
46 MODE
36 TVMD
42 AREA
41 CSMT
30 XCE
31 XSCK
29 S1
28 SO
2 FMDT
1 FMCK
35 T1
34 T2
33 T3
32 T4
D0 27
D1 26
D2 25
D3 24
D4 23
D5 22
D6 21
D7 20
A0 18
A1 17
A2 16
A3 15
A4 14
A5 13
A6 12
A7 11
A8 10
A9 9
A10 8
XCS 0 4
XCS 1 3
XW 6
XOE 5

INPUT

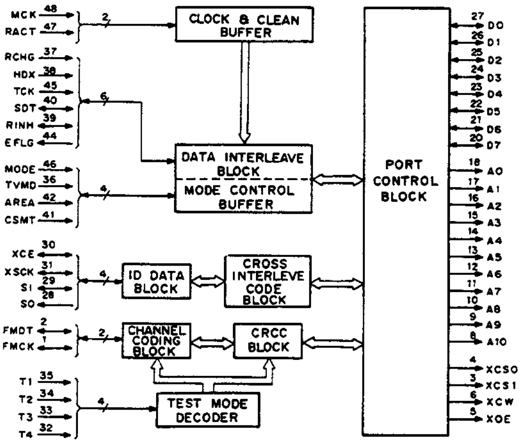
AREA : PCM AREA SIGNAL INPUT TERMINAL
HDX : TIMING CLOCK TO TRANSPORT DATA TO CX23012
MCK : NTSC/CCIR CLOCK INPUT
MODE : REC/PB CONTROL SIGNAL INPUT TERMINAL OF ALL PCM
RACT : START/STOP CONTROL INPUT OF CX23012
RCHG : SELECT TWO 16K-RAM USING ON TBC OR ERROR CORRECTION
TCK : TIMING CLOCK TO TRANSPORT DATA TO CX23012
TVMD : NTSC/CCIR STATUS SIGNAL INPUT
T1 – T4 : TEST MODE INPUTS

OUTPUT

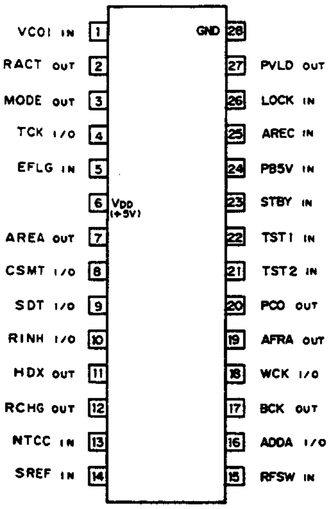
A0 – A10 : RAM ADDRESS OUTPUTS
EFLG : OUTPUT HIGH LEVEL IN CASE OF ERROR CORRECTION DISABLE
SO : ID DATA OUTPUT
XCS0.XCS1 : TWO 16K-RAM SELECT CONTROL OUTPUTS
XOE : 16K-RAM CONTROL OUTPUT
XW : 16K-RAM WRITING OUTPUT

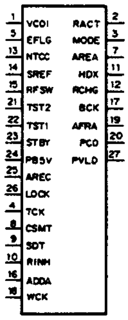
INPUT/OUTPUT

CSMT : (PB) OUTPUT HIGH LEVEL AT MUTE MODE ON CX23012
: (REC) INPUT DATA BLOCK WRITING ON HIGH LEVEL
D0 – D7 : RAM DATA INPUT/OUTPUTS.
FMCK : FM CLOCK INPUT/OUTPUT
FMDT : FM DATA INPUT/OUTPUT
RINH : (PB) PROHIBIT TO TURN OVER RCHG SIGNAL
: (REC) PROHIBIT TO WRITE A/D DATA TO 16K-RAM
SDT : 8 BIT SERIAL DATA TRANSFER TERMINAL
SI : ID DATA INPUT/OUTPUT
XCE : ID DATA TRANSPORTION SIGNAL INPUT/OUTPUT
XSCK : ID DATA TRANSPORTION CLOCK INPUT/OUTPUT

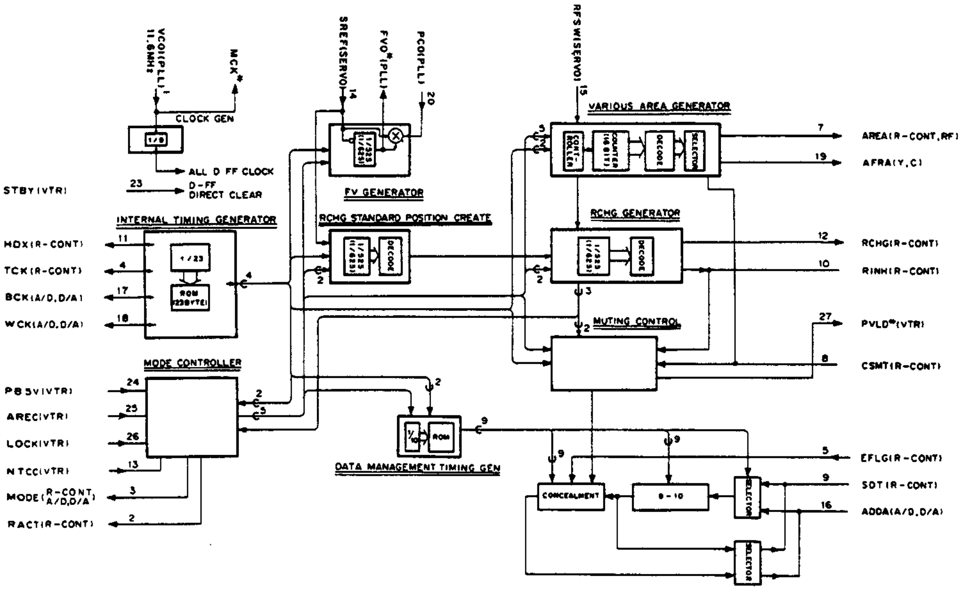

MCK 48
RACT 47
2
CLOCK & CLEAN BUFFER
RCHG 37
HDX 38
TCK 45
SDT 40
RINH 39
EFLG 44
6
DATA INTERLEAVE BLOCK
MODE CONTROL BUFFER
MODE 46
TVMD 36
AREA 42
CSMT 41
4
XCE 30
XSCK 31
SI 29
SO 28
4
ID DATA BLOCK
CROSS INTERLEVE CODE BLOCK
FMDT 2
FMCK 1
2
CHANNEL CODING BLOCK
CRCC BLOCK
T1 35
T2 34
T3 33
T4 32
4
TEST MODE DECODER
PORT CONTROL BLOCK
27 D0
26 D1
25 D2
24 D3
23 D4
22 D5
21 D6
20 D7
18 A0
17 A1
16 A2
15 A3
14 A4
13 A5
12 A6
11 A7
10 A8
9 A9
8 A10
4 XCS0
3 XCS1
6 XCW
5 XOE

CX23012 (SONY) FLAT PACKAGE
C-MOS PCM AUDIO SIGNAL PROCESSOR
— TOP VIEW —

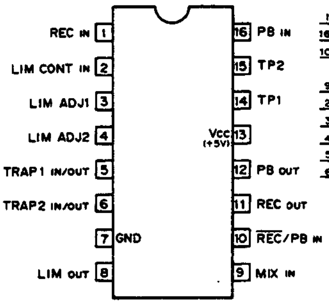

VCOI IN 1
RACT OUT 2
MODE OUT 3
TCK I/O 4
EFLG IN 5
6 VDD (+5V)
AREA OUT 7
CSMT I/O 8
SDT I/O 9
RINH I/O 10
HDX OUT 11
RCHG OUT 12
NTCC IN 13
SREF IN 14
GND 28
27 PVLD OUT
26 LOCK IN
25 AREC IN
24 PB5V IN
23 STBY IN
22 TST1 IN
21 TST2 IN
20 PCO OUT
19 AFRA OUT
18 WCK I/O
17 BCK OUT
16 ADDA I/O
15 RFSW IN

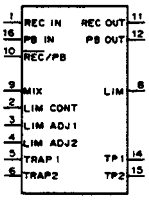

1 VCOI
5 EFLG
13 NTCC
14 SREF
15 RFSW
21 TST2
22 TST1
23 STBY
24 PB5V
25 AREC
26 LOCK
4 TCK
8 CSMT
9 SDT
10 RINH
16 ADDA
18 WCK
RACT 2
MODE 3
AREA 7
HDX 11
RCHG 12
BCK 17
AFRA 19
PCO 20
PVLD 27

ADDA ; TRANSFER TERMINAL OF 10 BIT SERIAL DATA
AFRA ; AREA SIGNAL OUTPUT TERMINAL AT AFTER REC
AREA ; PCM AREA SIGNAL OUTPUT TERMINAL
AREC ; AFTER REC CONTROL SIGNAL
CSMT ; (PB) OUTPUT "H" LEVEL AT MUTE MODE ON CX23011
(REC) OUTPUT DATA BLOCK WRITING ON "H" LEVEL
EFLG ; OUTPUT "H" LEVEL IN CASE OF ERROR CORRECTION DISABLE
HDX ; TIMING CLOCK TO TRANSPORT DATA TO CX23011
LOCK ; APPOINT TO START OR STOP PCM SYSTEM
MODE ; REC/PB CONTROL SIGNAL OUTPUT TERMINAL OF ALL PCM
NTCC ; "H" ; NTSC MODE/"L" ; CCIR MODE
PB5V ; REC/PB CONTROL SIGNAL
PCO ; COMPARE fv AND SREF'S PHASE
PVLD ; INDICATE PCM DATA ON THE TAPE
RACT ; START/STOP CONTROL OUTPUT OF CX23011
RCHG ; SELECT TWO 16K RAM USING ON TBC OR ERROR CORRECTION
RFSW ; RF SWITCHING PULSE INPUT TERMINAL
RINH ; (PB) PROHIBIT TO TURN OVER RCHG SIGNAL
(REC) PROHIBIT TO WRITE A/D DATA TO 16K-RAM
SDT ; 8 BIT SERIAL DATA TRANSFAR TERMINAL
SREF ; TIMING SIGNAL INPUT TERMINAL OF PCM
STBY ; INITIALIZE AND POWER SAVE MODE TERMINAL OF PCM
TCK ; TIMING CLOCK TO TRANSPORT DATA TO CX23011
TST1/2 ; TEST MODE CONTROL TERMINAL 1/2
VC0I ; CLOCK INPUT TERMINAL
WCK ; TIMING CLOCK TO TRANSPORT DATA TO A/D, DIA CONVERTER


VCOI(PLL) 11.6MHz 1
MCK*
CLOCK GEN
1/8
ALL D FF CLOCK
STBY(VTR) 23
D-FF DIRECT CLEAR
SREF(SERVO) 14
FVO*(PLL)
PCO(PLL) 20
1/525 (1/625)
FV GENERATOR
RFSW(SERVO) 15
VARIOUS AREA GENERATOR
CONT-ROLLER
COUNTER (16 BIT)
DECODE
SELECTOR
7 AREA(R-CONT,RF)
19 AFRA(Y,C)
INTERNAL TIMING GENERATOR
1/23
ROM (23BYTE)
HDX(R-CONT) 11
TCK(R-CONT) 4
BCK(A/D,D/A) 17
WCK(A/D,D/A) 18
RCHG STANDARD POSITION CREATE
1/525 (1/625)
DECODE
RCHG GENERATOR
12 RCHG(R-CONT)
10 RINH(R-CONT)
MUTING CONTROL
27 PVLD*(VTR)
8 CSMT(R-CONT)
MODE CONTROLLER
PB5V(VTR) 24
AREC(VTR) 25
LOCK(VTR) 26
NTCC(VTR) 13
MODE(R-CONT, A/D,D/A) 3
RACT(R-CONT) 2
1/10
ROM
DATA MANAGEMENT TIMING GEN
5 EFLG(R-CONT)
9 SDT(R-CONT)
16 ADDA(A/D,D/A)
CONCEALMENT
8-10
SELECTOR

CX22021 (SONY) FLAT PACKAGE
CHROMA SIDEBAND EMPHASIS/DE-EMPHASIS
— TOP VIEW —


REC IN 1
LIM CONT IN 2
LIM ADJ1 3
LIM ADJ2 4
TRAP1 IN/OUT 5
TRAP2 IN/OUT 6
7 GND
LIM OUT 8
16 PB IN
15 TP2
14 TP1
Vcc (+5V) 13
12 PB OUT
11 REC OUT
10 REC/PB IN
9 MIX IN

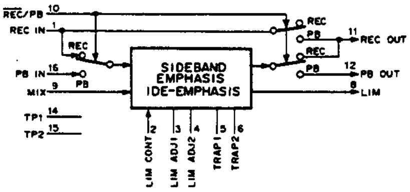

1 REC IN
16 PB IN
10 REC/PB
9 MIX
2 LIM CONT
3 LIM ADJ1
4 LIM ADJ2
5 TRAP1
6 TRAP2
REC OUT 11
PB OUT 12
LIM 8
TP1 14
TP2 15

INPUT
LIM CONT : LIMITER AMP CONTROL
MIX : SIGNAL IN TO ADDING AND FEEDBACK CIRCUIT
PB IN : PB CHROMA SIGNAL
REC IN : REC CHROMA SIGNAL
REC/PB : MODE SWITCH (L : REC/H : PB)

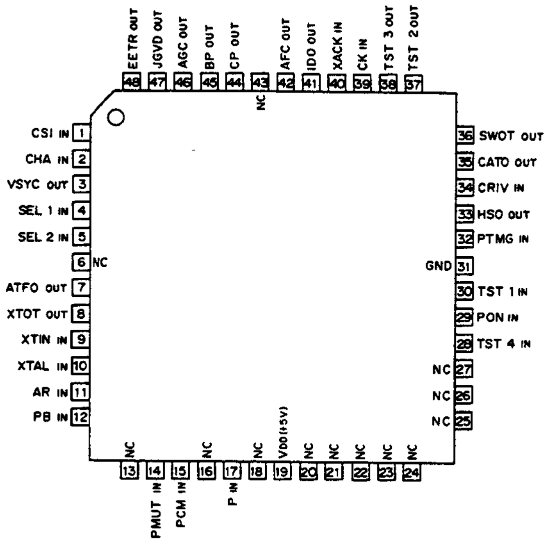
OUTPUT
LIM : LIMITER CIRCUIT OUTPUT
PB OUT : PB DE-EMPHASIS SIGNAL
REC OUT : REC EMPHASIS SIGNAL

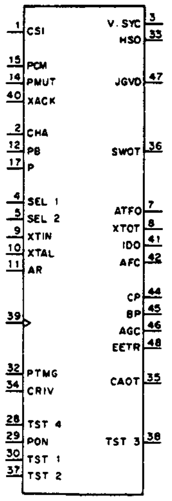
INPUT/OUTPUT
TRAP1, 2 : TRAP PHASE COMPENSTION

OTHER
LIM ADJ1, 2 : LIMITER GAIN ADJUSTMENT
TP1, 2 : TEST PIN


REC/PB 10
REC IN 1
PB IN 16
MIX 9
TP1 14
TP2 15
REC
PB
SIDEBAND EMPHASIS /DE-EMPHASIS
11 REC OUT
12 PB OUT
8 LIM
2 LIM CONT
3 LIM ADJ1
4 LIM ADJ2
5 TRAP1
6 TRAP2

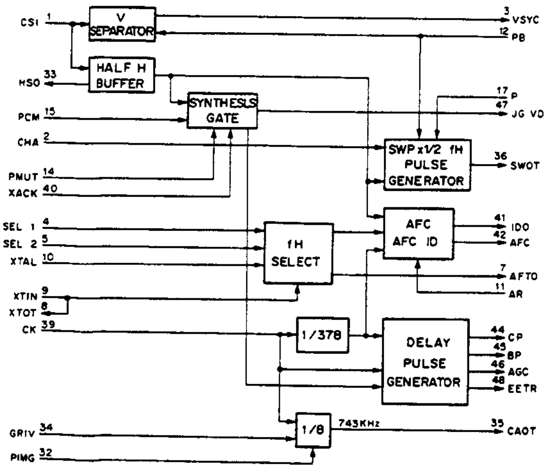
CX23054 (SONY) FLAT PACKAGE
C-MOS PCM/CHROMA SYNC PROCESSOR
- TOP VIEW -


EETR OUT 48
JGVD OUT 47
AGC OUT 46
BP OUT 45
CP OUT 44
NC 43
AFC OUT 42
IDO OUT 41
XACK IN 40
CK IN 39
TST 3 OUT 38
TST 2 OUT 37
CSI IN 1
CHA IN 2
VSYC OUT 3
SEL 1 IN 4
SEL 2 IN 5
6 NC
ATFO OUT 7
XTOT OUT 8
XTIN IN 9
XTAL IN 10
AR IN 11
PB IN 12
36 SWOT OUT
35 CATO OUT
34 CRIV IN
33 HSO OUT
32 PTMG IN
GND 31
30 TST 1 IN
29 PON IN
28 TST 4 IN
NC 27
NC 26
NC 25
NC 13
PMUT IN 14
PCM IN 15
NC 16
P IN 17
NC 18
VDD(+5V) 19
NC 20
NC 21
NC 22
NC 23
NC 24

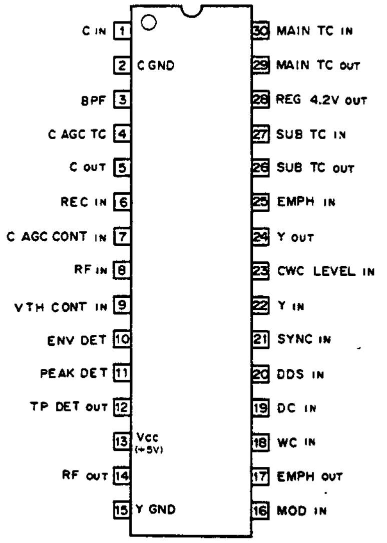

1 CSI
15 PCM
14 PMUT
40 XACK
2 CHA
12 PB
17 P
4 SEL 1
5 SEL 2
9 XTIN
10 XTAL
11 AR
39
32 PTMG
34 CRIV
28 TST 4
29 PON
30 TST 1
37 TST 2
V. SYC 3
HSO 33
JGVD 47
SWOT 36
ATFO 7
XTOT 8
IDO 41
AFC 42
CP 44
BP 45
AGC 46
EETR 48
CAOT 35
TST 3 38

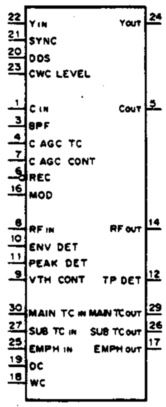
INPUT
AR : POST RECORDING AREA SIGNAL INPUT
CHA : RF SWITCHING PULSE INPUT
CK : MAIN CLOCK INPUT
CRIV : CHROMA CARRIER REVERSE MODE INPUT
CSI : COMPOSITE SYNC INPUT
P : PAL/NTSC MODE SELECT INPUT
PB : PB/REC MODE SELECT INPUT
PCM : EIAJ PCM MODE
PMUT : PLAY BACK MUTE MODE INPUT
PON : SYSTEM INITIALIZE INPUT
PTMG : PAL PS TIMING INPUT
SEL1.2 : ATF FREQUENCY SELECT INPUT
TST1.2.4 : TEST PIN
XACK : ACK MODE INPUT
XTAL : ATF PILOT CLOCK INPUT
XTIN : ATF PILOT GENERATOR INPUT

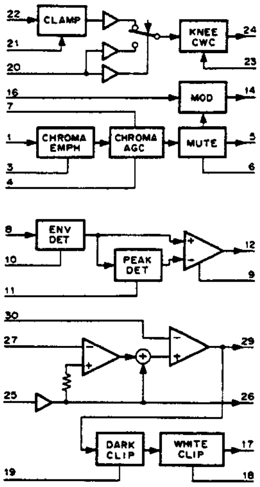
OUTPUT
AFC : AFC CONTROL OUTPUT
ATFO : ATF PILOT OUTPUT
AGC : SYNC CLAMP/PEDESTAL CLAMP OUTPUT
BP : BURST TRAP TIMING OUTPUT
CAOT : CHROMA CARRIER OUTPUT
CP : BURST CLOCK TIMING OUTPUT
EETR : EE TRAP OUTPUT
HSO : H SYNC OUTPUT
IDO : APC ID/AFC ID CONTROL OUTPUT
JGVD : VIRS KILLER/PMUT OUTPUT
SWOT : NTSC PI TIMING OUTPUT
TST3 : TEST PIN
VSYC : V SYNC SEPARATOR OUTPUT
XTOT : ATF PILOT GENERATOR OUTPUT


CSI 1
V SEPARATOR
3 VSYC
12 PB
HSO 33
HALF H BUFFER
SYNTHESIS GATE
PCM 15
17 P
47 JG VD
CHA 2
SWP x1/2 fH PULSE GENERATOR
36 SWOT
PMUT 14
XACK 40
SEL 1 4
SEL 2 5
XTAL 10
fH SELECT
AFC AFC ID
41 IDO
42 AFC
7 AFTO
11 AR
XTIN 9
XTOT 8
CK 39
1/378
DELAY PULSE GENERATOR
44 CP
45 BP
46 AGC
48 EETR
CRIV 34
PTMG 32
1/8
743KHz
35 CAOT

CXA1047M (SONY)
VIDEO Y/C REC PROCESSOR
- TOP VIEW -


C IN 1
2 C GND
BPF 3
C AGC TC 4
C OUT 5
REC IN 6
C AGC CONT IN 7
RF IN 8
VTH CONT IN 9
ENV DET 10
PEAK DET 11
TP DET OUT 12
13 Vcc (+5V)
RF OUT 14
15 Y GND
30 MAIN TC IN
29 MAIN TC OUT
28 REG 4.2V OUT
27 SUB TC IN
26 SUB TC OUT
25 EMPH IN
24 Y OUT
23 CWC LEVEL IN
22 Y IN
21 SYNC IN
20 DDS IN
19 DC IN
18 WC IN
17 EMPH OUT
16 MOD IN


22 Y IN
21 SYNC
20 DDS
23 CWC LEVEL
YOUT 24
1 C IN
3 BPF
4 C AGC TC
7 C AGC CONT
6 REC
16 MOD
COUT 5
8 RF IN
10 ENV DET
11 PEAK DET
9 VTH CONT
RF OUT 14
TP DET 12
30 MAIN TC IN
27 SUB TC IN
25 EMPH IN
19 DC
18 WC
MAIN TC OUT 29
SUB TC OUT 26
EMPH OUT 17


22
CLAMP
21
20
KNEE CWC
24
23
16
7
MOD
14
1
CHROMA EMPH
CHROMA AGC
MUTE
5
3
4
6
8
ENV DET
10
PEAK DET
11
12
9
30
27
29
25
26
DARK CLIP
WHITE CLIP
17
19
18

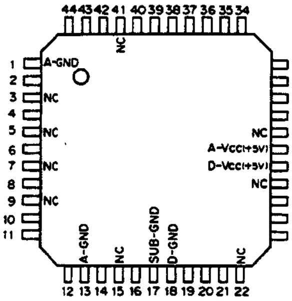
INPUT
BPF : BAND PASS FILTER
C AGC CONT : CHROMA AGC LEVEL CONTROL
C AGC TC : CHROMA AGC TIME CONSTANT
C IN : CHROMA INPUT
CWC LEVEL : CAMERA WHITE CLIP LEVEL
DC : DARK CLIP LEVEL
DDS IN : DATA DISPLAY SYSTEM INPUT
EMPH IN : EMPHASIS INPUT
ENV DET : ENVELOP DETECT TIME CONSTANT
MAIN TC IN : MAIN TIME CONSTANT INPUT
MOD IN : MODULATOR INPUT
PEAK DET : PEAK DETECT TIME CONSTANT
REC : REC/PB SWITCH
RF IN : PB RF INPUT
SUB TC IN : SUB EMPHASIS TIME CONSTANT AND LIMITER INPUT
SYNC IN : COMPOSITE SYNC INPUT
VTH CONT : ENVELOPE PEAK DETECT LEVEL CONTROL
WC : WHITE CLIP LEVEL
Y IN : Y INPUT

OUTPUT
C OUT : CHROMA OUTPUT
EMPH OUT : EMPHASIS OUTPUT
MAIN TC OUT : MAIN TIME CONSTANT OUTPUT
RF OUT : FM MODULATOR OUTPUT
SUB TC OUT : SUB EMPHASIS TIME CONSTANT
TP DET : ENVELOPE PEAK DETECT OUTPUT
Y OUT : Y (WITH DDS) OUTPUT

CXA1204Q (SONY) FLAT PACKAGE

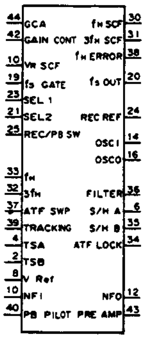
C-MOS ATF (Automatic Track Finding) FOR 8mm VTR

- TOP VIEW -


44 43 42 41 40 39 38 37 36 35 34
NC
A-GND
NC
NC
NC
NC
NC
A-Vcc(+5V)
D-Vcc(+5V)
NC
A-GND
NC
SUB-GND
D-GND
NC
12 13 14 15 16 17 18 19 20 21 22
1 2 3 4 5 6 7 8 9 10 11
33 32 31 30 29 28 27 26 25 24 23

(A - Vcc = D - Vcc = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	-	A-GND	16	O	OSCO	31	O	$3f_H$ SCF
2	I	TSB	17	-	SUB-GND	32	I	$3f_H$
3	-	NC	18	-	D-GND	33	I	f_H
4	I	TSA	19	I	f_s GATE	34	O	ATF LOCK
5	-	NC	20	O	f_s OUT	35	O	S/H B
6	O	S/H A	21	I	SEL2	36	O	FILTER
7	-	NC	22	-	NC	37	I	ATF SWP
8	I	V_{REF}	23	I	SEL1	38	O	f_H ERROR
9	-	NC	24	O	REC REF	39	I	TRACKING
10	I	V_R SCF	25	I	REC/PB SW	40	I	PB PILOT
11	I	NFI	26	-	NC	41	-	NC
12	O	NFO	27	-	D-Vcc	42	I	GAIN CONT
13	-	A-GND	28	-	A-Vcc	43	O	PRE AMP
14	I	OSCI	29	-	NC	44	I	GCA
15	-	NC	30	O	f_H SCF			


44 GCA
42 GAIN CONT
10 VR SCF
19 fs GATE
23 SEL 1
21 SEL2
25 REC/PB SW
33 fH
32 3fH
37 ATF SWP
39 TRACKING
4 TSA
2 TSB
8 V Ref
10 NFI
40 PB PILOT
fH SCF 30
3fH SCF 31
fH ERROR 38
fs OUT 20
REC REF 24
OSCI 14
OSCO 16
FILTER 36
S/H A 6
S/H B 35
ATF LOCK 34
NFO 12
PRE AMP 43

INPUT

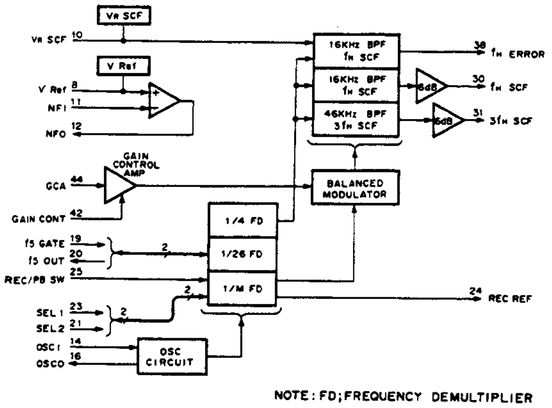
$3f_H$	: 47KHz BPF SIGNAL
ATF SWP	: ATF SWITCHING PULSE
f_H	: 16KHz BPF SIGNAL
f_s	: f_s OUTPUT CONTROL
GAIN CONT	: AGC CONTROL
GCA	: AGC INPUT SIGNAL
NFI	: OP AMP NEGATIVE PHASE
OSCI	: OSCILLATOR FOR FREQUENCY DEMULTIPLIER
PB PILOT	: PB PILOT SIGNAL
REC/PB SW	: SWITCH CONTROL SIGNAL (L : REC/H : PB)
SEL1, SEL2	: REC PILOT SIGNAL
TRACKING	: TRACKING ADJUSTMENT
TS A, TS B	: SAMPLE HOLD TIMING PULSE
V Ref	: REFERENCE VOLTAGE FOR ANALOG AMP
V_R SCF	: REFERENCE VOLTAGE FOR SWITCHED CAPACITOR FILTER

OUTPUT

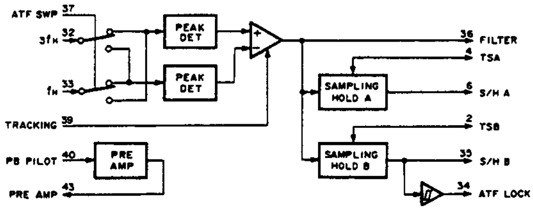
$3f_H$ SCF	: 47KHz SWITCHED CAPACITOR FILTER
ATF LOCK	: ATF LOCK DETECT SIGNAL
f_H ERROR	: 16KHz ERROR PHASE SIGNAL
f_H SCF	: 16KHz SWITCHED CAPACITOR FILTER
FILTER	: PEAK DETECT SIGNAL
f_s OUT	: 1/26xOSC OUTPUT (228KHz)
NFO	: OP AMP POSITIVE PHASE
OSCO	: OSCILLATOR FOR FREQUENCY DEMULTIPLIER
PRE AMP	: PB PILOT SIGNAL AMP
REC REF	: REC PILOT REFERENCE SIGNAL
S/H A, S/H B	: SAMPLE/HOLD PULSE

INPUT		DIVIDING RATIO
SEL1	SEL2	
0	0	1/40
0	1	1/50
1	0	1/36
1	1	1/58

0 : LOW LEVEL (up to 0.5V)
1 : HIGH LEVEL (at least 3.5V)


VR SCF
VR SCF 10
V Ref
V Ref 8
NFI 11
NFO 12
GAIN CONTROL AMP
GCA 44
GAIN CONT 42
fs GATE 19
fs OUT 20
REC/PB SW 25
SEL 1 23
SEL 2 21
OSCI 14
OSCO 16
16KHz BPF fH SCF
16KHz BPF fH SCF
46KHz BPF 3fH SCF
6dB
6dB
38 fH ERROR
30 fH SCF
31 3fH SCF
BALANCED MODULATOR
1/4 FD
1/26 FD
1/M FD
OSC CIRCUIT
24 REC REF
2
2
2

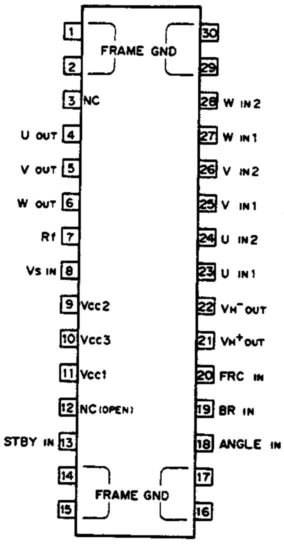
NOTE : FD; FREQUENCY DEMULTIPLIER
SCF; SWITCHED CAPACITOR FILTER

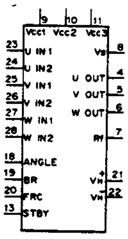

ATF SWP 37
3fH 32
fH 33
TRACKING 39
PB PILOT 40
PRE AMP 43
PEAK DET
PEAK DET
PRE AMP
SAMPLING HOLD A
SAMPLING HOLD B
36 FILTER
4 TSA
6 S/H A
2 TSB
35 S/H B
34 ATF LOCK

CXA1127M (SONY) FLAT PACKAGE

CAPSTAN MOTOR DRIVER

- TOP VIEW -


FRAME GND
1
2
3 NC
U OUT 4
V OUT 5
W OUT 6
Rf 7
Vs IN 8
9 Vcc2
10 Vcc3
11 Vcc1
12 NC(OPEN)
STBY IN 13
14
15
FRAME GND
30
29
28 W IN2
27 W IN1
26 V IN2
25 V IN1
24 U IN2
23 U IN1
22 VH- OUT
21 VH+ OUT
20 FRC IN
19 BR IN
18 ANGLE IN
17
16


9 10 11
Vcc1 Vcc2 Vcc3
23 U IN1
24 U IN2
25 V IN1
26 V IN2
27 W IN1
28 W IN2
18 ANGLE
19 BR
20 FRC
13 STBY
Vs 8
U OUT 4
V OUT 5
W OUT 6
Rf 7
VH+ 21
VH- 22

INPUT

BR	: MOTOR BRAKE (H : STOP, L : PLAY)
FRC	: FWD/REV CONTROL (H : FWD, L : REV)
STBY	: STAND-BY (GND : POWER OFF)
U IN1, 2	: U PHASE INPUTS
V IN1, 2	: V PHASE INPUTS
Vs	: MOTOR INPUT VOLTAGE (Vs < Vcc2)
W IN1, 2	: W PHASE INPUTS

OUTPUT

U OUT	: U PHASE OUTPUT
V OUT	: V PHASE OUTPUT
V_H^+, V_H^-	: HALL BIAS CURRENT
W OUT	: W PHASE OUTPUT

OTHERS

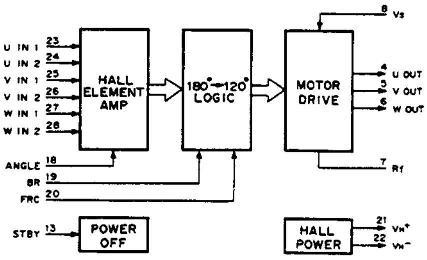
Rf	: GND FOR OUTPUT TRANSISTOR
Rs	: GND FOR OUTPUT DRIVER

NOTE :

Vcc1	+4 to +7V	OPEN
Vcc2	+4 to +12V	+6 to +12V
Vcc3	short to Vcc1	short to Vcc2
Vs	Vs<Vcc2	Vs<Vcc2

INPUT			FRC	FUNCTION
U	V	W		
H	H	L	0	W→V PHASE
			1	V→W PHASE
H	L	L	0	W→U PHASE
			1	U→W PHASE
L	L	H	0	V→W PHASE
			1	W→V PHASE
L	H	L	0	U→V PHASE
			1	V→U PHASE
H	L	H	0	V→U PHASE
			1	U→V PHASE
L	H	H	0	U→W PHASE
			1	W→U PHASE

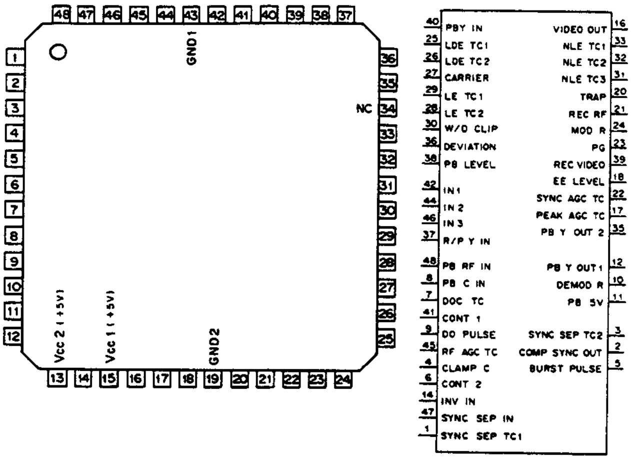
H : HIGH LEVEL
L : LOW LEVEL
1 : 2.0 to Vcc2
0 : 0 to 0.3V


U IN 1 23
U IN 2 24
V IN 1 25
V IN 2 26
W IN 1 27
W IN 2 28
ANGLE 18
BR 19
FRC 20
STBY 13
HALL ELEMENT AMP
180°→120° LOGIC
MOTOR DRIVE
8 Vs
4 U OUT
5 V OUT
6 W OUT
7 Rf
POWER OFF
HALL POWER
21 VH+
22 VH-

CXA1230AR (SONY) FLAT PACKAGE

VIDEO Y SIGNAL PROCESSOR

- TOP VIEW -


GND1
NC
Vcc2 (+5V)
Vcc1 (+5V)
GND2
40 PBY IN
25 LDE TC1
26 LDE TC2
27 CARRIER
29 LE TC1
28 LE TC2
30 W/D CLIP
36 DEVIATION
38 PB LEVEL
42 IN1
44 IN2
46 IN3
37 R/P Y IN
48 PB RF IN
8 PB C IN
7 DOC TC
41 CONT 1
9 DO PULSE
45 RF AGC TC
4 CLAMP C
6 CONT 2
14 INV IN
47 SYNC SEP IN
1 SYNC SEP TC1
VIDEO OUT 16
NLE TC1 33
NLE TC2 32
NLE TC3 31
TRAP 20
REC RF 21
MOD R 24
PG 23
REC VIDEO 39
EE LEVEL 18
SYNC AGC TC 22
PEAK AGC TC 17
PB Y OUT 2 35
PB Y OUT1 12
DEMOD R 10
PB 5V 11
SYNC SEP TC2 3
COMP SYNC OUT 2
BURST PULSE 5

(V_{DD} = + 5V)

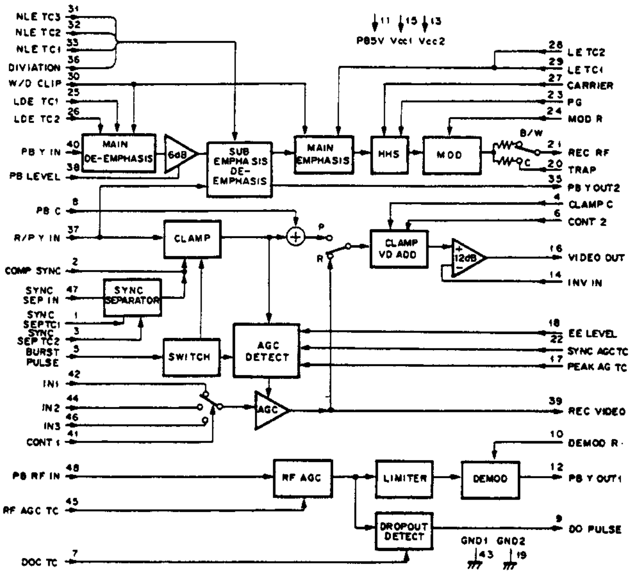
PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I	SYNC SEP TC1	17	I	PEAK AGC TC	33	I	NLE TC1
2	O	COMP SYNC	18	I	EE LEVEL	34	–	NC
3	I	SYNC SEP TC2	19	–	GND2	35	O	PB Y OUT2
4	I	CLAMP C	20	I	TRAP	36	I	DEVIATION
5	I	BURST PULSE	21	O	REC RF	37	I	R/P Y IN
6	I	CONT2	22	I	SYNC AGC TC	38	I	PB LEVEL
7	I	DOC TC	23	I	PG	39	O	REC VIDEO
8	I	PB C	24	I	MOD R	40	I	PB Y IN
9	O	DO PULSE	25	I	LDE TC1	41	I	CONT1
10	I	DEMOD R	26	I	LDE TC2	42	I	IN1
11	I	PB 5V	27	I	CARRIER	43	–	GND1
12	O	PB Y OUT1	28	I	LE TC2	44	I	IN2
13	–	Vcc2	29	I	LE TC1	45	I	RF AGC TC
14	I	INV IN	30	I	W/D CLIP	46	I	IN3
15	–	Vcc1	31	I	NLE TC3	47	I	SYNC SEP IN
16	O	VIDEO OUT	32	I	NLE TC2	48	I	PB RF IN

INPUT

BURST PULSE : BURST PULSE INPUT
CARRIER : FM MODULATOR CARRIER CONTROL INPUT
CLAMP C : EXTERNAL CAPACITOR FOR CLAMPING INPUT
CONT 1 : INTERNAL SWITCH CONTROL INPUT
CONT 2 : MUTING AND VD-ADD CONTROL INPUT
DEMOD R : EXTERNAL RESISTOR FOR FM DEMODULATOR INPUT
DEVIATION : DEVIATION CONTROL INPUT
DOC TC : EXTERNAL CAPACITOR FOR DROPOUT DETECTION INPUT
EE LEVEL : SYNC AGC CONTROL INPUT
IN 1 – IN 3 : RECORDING VIDEO SIGNAL INPUTS
INV IN : INVERTING INPUT FOR VIDEO CIRCUIT
LDE TC1.TC2 : EXTERNAL RESISTOR FOR LINEAR DE-EMPHASIS INPUTS
LE TC1.TC2 : EXTERNAL CR FOR LINEAR EMPHASIS INPUTS
MOD R : EXTERNAL RESISTOR FOR FM MODULATOR INPUT
NLE TC1 – NLE TC3
: EXTERNAL CAPACITOR FOR NON-LINEAR EMPHASIS INPUTS
PB 5V : POWER FOR PLAYBACK SYSTEM INPUT
PB C : PB CHROMA INPUT AND M/C CONTROL INPUT
PB LEVEL : PB Y OUT2 SIGNAL CONTROL INPUT
PB RF IN : PB RF (FM) INPUT
PB Y IN : PB Y SIGNAL FOR DE-EMPHASIS INPUT
PEAK AGC TC : EXTERNAL CR INPUT FOR PEAK AGC
PG : PG (30Hz) SIGNAL INPUT
RF AGC TC : EXTERNAL CR FOR RF AGC INPUT
R/P Y IN : Y SIGNAL FOR CLAMPING INPUT
SYNC AGC TC : EXTERNAL CR INPUT FOR SYNC AGC
SYNC SEP IN : SYNC SEPARATION SIGNAL INPUT
SYNC SEP TC1.TC2
: EXTERNAL CR INPUT FOR SYNC SEPARATION
TRAP : TRAP INPUT
W/D CLIP : LINEAR EMPHASIS AND W/D CLIP CONTROL INPUT

OUTPUT

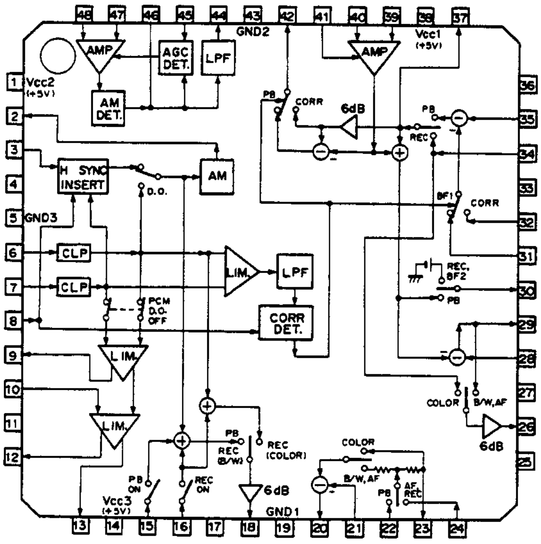
COMP SYNC : COMPOSITE SYNC OUTPUT
DO PULSE : DROPOUT PULSE OUTPUT
PB Y OUT1 : FREQUENCY DEMODULATOR OUTPUT
PB Y OUT2 : PB Y OUTPUT
REC RF : Y-FM SIGNAL OUTPUT
REC VIDEO : AMPLIFIED Y SIGNAL OUTPUT
VIDEO OUT : VIDEO OUTPUT


NLE TC3 31
NLE TC2 32
NLE TC1 33
DIVIATION 36
W/D CLIP 30
LDE TC1 25
LDE TC2 26
PB Y IN 40
PB LEVEL 38
PB C 8
R/P Y IN 37
COMP SYNC 2
SYNC SEP IN 47
SYNC SEPTC1 1
SYNC SEP TC2 3
BURST PULSE 5
IN1 42
IN2 44
IN3 46
CONT 1 41
PB RF IN 48
RF AGC TC 45
DOC TC 7
11 15 13
PB5V Vcc1 Vcc2
MAIN DE-EMPHASIS
6dB
SUB EMPHASIS DE-EMPHASIS
MAIN EMPHASIS
HHS
MOD
B/W
C
P
R
CLAMP
CLAMP VD ADD
12dB
SYNC SEPARATOR
SWITCH
AGC DETECT
AGC
RF AGC
LIMITER
DEMOD
DROPOUT DETECT
28 LE TC2
29 LE TC1
27 CARRIER
23 PG
24 MOD R
21 REC RF
20 TRAP
35 PB Y OUT2
4 CLAMP C
6 CONT 2
16 VIDEO OUT
14 INV IN
18 EE LEVEL
22 SYNC AGC TC
17 PEAK AG TC
39 REC VIDEO
10 DEMOD R
12 PB Y OUT1
9 DO PULSE
GND1 43
GND2 19

CXA1231AR (SONY) FLAT PACKAGE

Y/C SEPARATION COMB FILTER

- TOP VIEW -


GND2
Vcc1 (+5V)
Vcc2 (+5V)
AMP
AGC DET.
LPF
AM DET.
AM
H SYNC INSERT
D.O.
GND3
CLP
LIM.
LPF
CORR DET.
PCM D.O. OFF
PB
CORR
6dB
REC
BF1
REC, BF2
COLOR
B/W, AF
REC (COLOR)
REC (B/W)
PB ON
REC ON
Vcc3 (+5V)
GND1
AF REC

PIN No.	PIN NAME
1	Vcc2
2	AM OUT
3	HD IN
4	XTAL
5	GND3
6	YD IN
7	Y IN
8	CORR ADJ
9	Y-YD OUT
10	Y-YD IN
11	PCM IN
12	LIM OUT2
13	LIM OUT1
14	Vcc3
15	PB MIX IN1
16	REC MIX IN

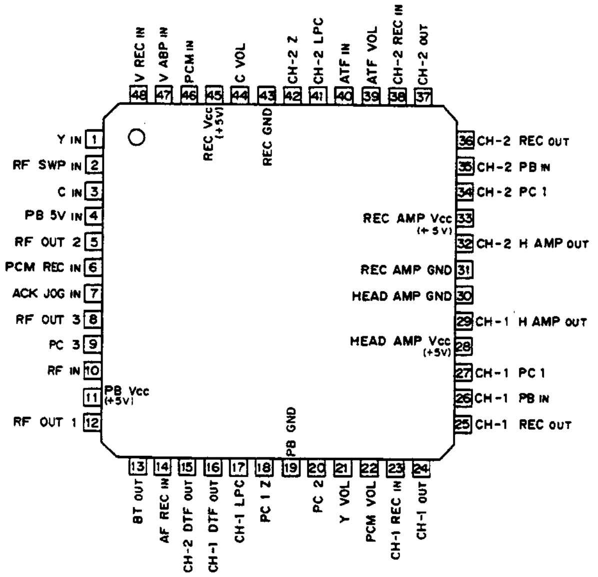
PIN No.	PIN NAME
17	DOP IN
18	Y OUT2
19	GND1
20	Y OUT1
21	PB MIX IN2
22	PB Y IN
23	FSC TRAP
24	REC Y IN
25	ACK IN
26	REC Y OUT
27	BF1
28	Y BPF IN
29	Y OUT3
30	CT OUT
31	CT IN2
32	CT IN1

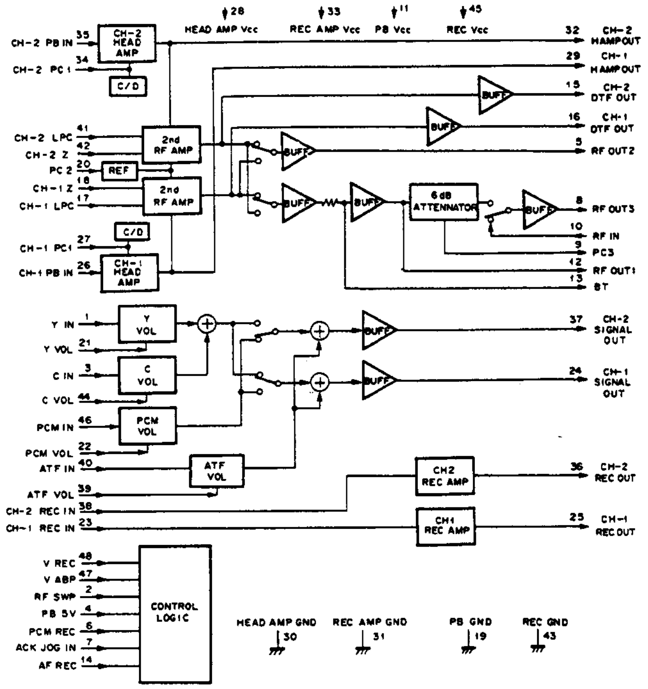
PIN No.	PIN NAME
33	BF2
34	REC VIDEO IN
35	PB CHROMA IN
36	PB 5V IN
37	CDL OUT
38	Vcc1
39	CDL1 IN
40	CDL2 IN
41	CD ADJ
42	C OUT
43	GND2
44	YD OUT
45	YD ADJ
46	PEAK HOLD
47	YDL1 IN
48	YDL2 IN

ACK ; ACKNOWLEDGMENT
ADJ ; ADJUSTMENT
AF ; AFTER RECODING
AGC ; AUTOMATIC GAIN CONTROL
AM ; AMPLITUDE MODULATION
AMP ; AMPLIFIER
BF ; BURST FLAG
BPF ; BAND PASS FILTER
C ; CHROMA
CD ; DEFERED C
CDL ; C DELAY LINE
CLP ; CLAMP
CORR; CORRELATION
CT ; C CROSSTALK
DET ; DETECTOR
DOP ; DROP-OUT
D.O ; DROP-OUT
FSC ; FREQUENCY OF SUB-CARRIER

GND ; GROUND
H ; HORIZONTAL
HD ; H DRIVE PULSE
IN ; INPUT
LIM ; LIMITER
LPF ; LOW PASS FILTER
MIX ; MIXER
OUT ; OUTPUT
PB ; PLAYBACK
PCM ; PULSE CODE MODULATION
REC ; RECORDING
SYNC; SYNCHRONIZATION
Vcc ; POWER
XTAL; CRYSTAL
Y ; LUMINANCE
YD ; DEFERRED Y
YDL ; Y DELAY LINE

CXA1234AR (SONY) FLAT PACKAGE
VIDEO RF REC/PB AMPLIFIER
- TOP VIEW -


V REC IN
V ABP IN
PCM IN
C VOL
CH-2 Z
CH-2 LPC
ATF IN
ATF VOL
CH-2 REC IN
CH-2 OUT
48
47
46
45
44
43
42
41
40
39
38
37
REC Vcc (+5V)
REC GND
Y IN 1
RF SWP IN 2
C IN 3
PB 5V IN 4
RF OUT 2 5
PCM REC IN 6
ACK JOG IN 7
RF OUT 3 8
PC 3 9
RF IN 10
11 PB Vcc (+5V)
RF OUT 1 12
36 CH-2 REC OUT
35 CH-2 PB IN
34 CH-2 PC 1
REC AMP Vcc (+5V) 33
32 CH-2 H AMP OUT
REC AMP GND 31
HEAD AMP GND 30
29 CH-1 H AMP OUT
HEAD AMP Vcc (+5V) 28
27 CH-1 PC 1
26 CH-1 PB IN
25 CH-1 REC OUT
PB GND
13
14
15
16
17
18
19
20
21
22
23
24
BT OUT
AF REC IN
CH-2 DTF OUT
CH-1 DTF OUT
CH-1 LPC
PC 1 Z
PC 2
Y VOL
PCM VOL
CH-1 REC IN
CH-1 OUT

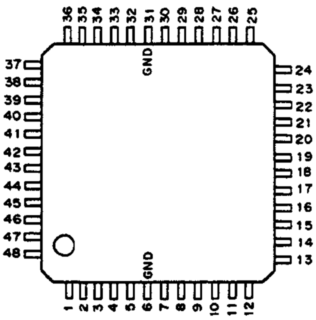

28 HEAD AMP Vcc
33 REC AMP Vcc
11 PB Vcc
45 REC Vcc
CH-2 PB IN 35
CH-2 PC 1 34
CH-2 HEAD AMP
C/D
32 CH-2 HAMPOUT
29 CH-1 HAMPOUT
15 CH-2 DTF OUT
16 CH-1 DTF OUT
5 RF OUT2
CH-2 LPC 41
CH-2 Z 42
PC 2 20
REF
CH-1 Z 18
CH-1 LPC 17
2nd RF AMP
2nd RF AMP
BUFF
6dB ATTENNATOR
8 RF OUT3
10 RF IN
9 PC3
12 RF OUT1
13 BT
CH-1 PC1 27
CH-1 PB IN 26
CH-1 HEAD AMP
Y IN 1
Y VOL 21
Y VOL
C IN 3
C VOL
C VOL 44
PCM IN 46
PCM VOL
PCM VOL 22
ATF IN 40
ATF VOL
ATF VOL 39
CH-2 REC IN 38
CH-1 REC IN 23
37 CH-2 SIGNAL OUT
24 CH-1 SIGNAL OUT
CH2 REC AMP
CH1 REC AMP
36 CH-2 REC OUT
25 CH-1 REC OUT
V REC 48
V ABP 47
RF SWP 2
PB 5V 4
PCM REC 6
ACK JOG IN 7
AF REC 14
CONTROL LOGIC
HEAD AMP GND 30
REC AMP GND 31
PB GND 19
REC GND 43

INPUT
ACK JOG IN : VIDEO/RF SELECT FOR RF OUT 3
AF REC : AFTER RECODING MODE
ATF IN : REC ATF SIGNAL INPUT
ATF VOL : REC ATF GAIN CONTROL
C IN : REC CHROMA INPUT
CH-1 PB IN : CH-1 HEAD AMP INPUT
CH-1 REC IN : CH-1 REC AMP INPUT
CH-2 PB IN : CH-2 HEAD AMP INPUT
CH-2 REC IN : CH-2 REC AMP INPUT
C VOL : REC CHROMA GAIN CONTROL
PB 5V : PB ON/OFF CONTROL
PCM IN : REC PCM SIGNAL INPUT
PCM REC : PCM AUDIO RECORDING MODE
PCM VOL : REC PCM GAIN CONTROL
RF IN : VIDEO INPUT FOR RF OUT 3
RF SWP IN : RF SWITCHING PULSE INPUT
V ABP IN : OVER LAP RECORDING MODE INPUT
V REC IN : VIDEO RECORDING MODE INPUT
Y IN : REC Y INPUT
Y VOL : REC Y GAIN CONTROL

OUTPUT
BT : BIAS TRAP FILTER
CH-1 OUT : REC CH-1 OUTPUT
CH-1 DTF OUT : DTF CH-1 OUTPUT
CH-1 H AMP OUT : CH-1 HEAD AMP OUTPUT
CH-1 REC OUT : CH-1 REC AMP OUTPUT
CH-2 OUT : REC CH-2 OUTPUT
CH-2 DTF OUT : DTF CH-2 OUTPUT
CH-2 H AMP OUT : CH-2 HEAD AMP OUTPUT
CH-2 REC OUT : CH-2 REC AMP OUTPUT
RF OUT 1 : RF OUTPUT FOR VIDEO
RF OUT 2 : RF OUTPUT FOR PCM
RF OUT 3 : RF OUTPUT

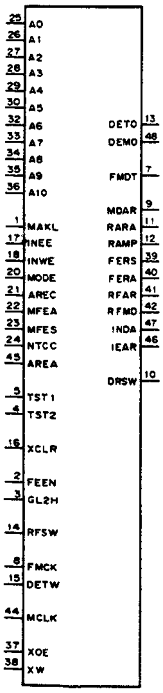
OTHERS
CH-1 LPC : BYPASS CAPACITOR FOR CH-1 HEAD AMP
CH-1 PC1 : BYPASS CAPACITOR FOR CH-1 HEAD AMP
CH-1 Z : LCR RESONANCE CIRCUIT
CH-2 LPC : BYPASS CAPACITOR FOR CH-2 2nd RF AMP
CH-2 PC1 : BYPASS CAPACITOR FOR CH-2 HEAD AMP
CH-2 Z : LCR RESONANCE CIRCUIT
PC 2 : BYPASS CAPACITOR
PC 3 : BYPASS CAPACITOR FOR ATTENUATER

CXD1066Q (SONY)
C-MOS PCM AUDIO INDEX TIMING GENERATOR
– TOP VIEW –


36 35 34 33 32 31 30 29 28 27 26 25
37 38 39 40 41 42 43 44 45 46 47 48
24 23 22 21 20 19 18 17 16 15 14 13
1 2 3 4 5 6 7 8 9 10 11 12
GND
GND

(V_{DD} = + 5V)

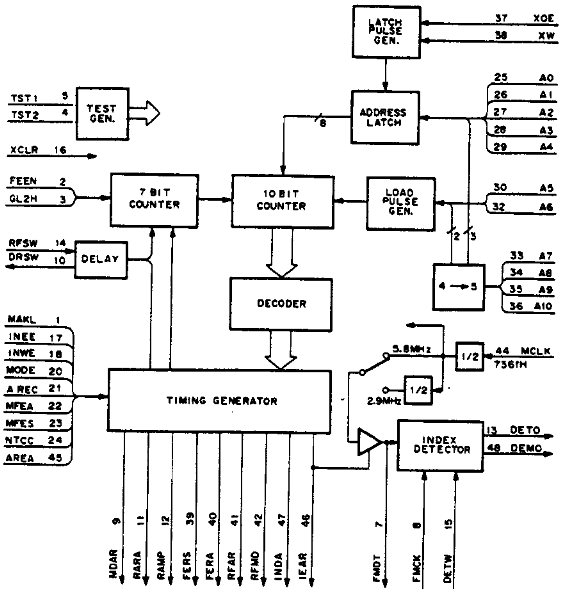
PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGANL	PIN NO.	I/O	SYGNAL	PIN NO.	I/O	SYGNAL
1	I	MAKL	13	O	DETO	25	I	A0	37	I	XOE
2	I	FEEN	14	I	RFSW	26	I	A1	38	I	XW
3	I	GL 2H	15	I	DETW	27	I	A2	39	O	FERS
4	I	TST2	16	I	XCLR	28	I	A3	40	O	FERA
5	I	TST1	17	I	INEE	29	I	A4	41	O	RFAR
6	–	GND	18	I	INWE	30	I	A5	42	O	RFMD
7	I/O	FMDT	19	–	V_{DD}	31	–	GND	43	–	V_{DD}
8	I	FMCK	20	I	MODE	32	I	A6	44	I	MCLK
9	O	MDAR	21	I	AREC	33	I	A7	45	I	AREA
10	O	DRSW	22	I	MFEA	34	I	A8	46	O	IEAR
11	O	RARA	23	I	MFES	35	I	A9	47	O	INDA
12	O	RAMP	24	I	NTCC	36	I	A10	48	O	DEMO


25 A0
26 A1
27 A2
28 A3
29 A4
30 A5
32 A6
33 A7
34 A8
35 A9
36 A10
1 MAKL
17 INEE
18 INWE
20 MODE
21 AREC
22 MFEA
23 MFES
24 NTCC
45 AREA
5 TST1
4 TST2
16 XCLR
2 FEEN
3 GL2H
14 RFSW
8 FMCK
15 DETW
44 MCLK
37 XOE
38 XW
DETO 13
DEMO 48
FMDT 7
MDAR 9
RARA 11
RAMP 12
FERS 39
FERA 40
RFAR 41
RFMD 42
INDA 47
IEAR 46
DRSW 10

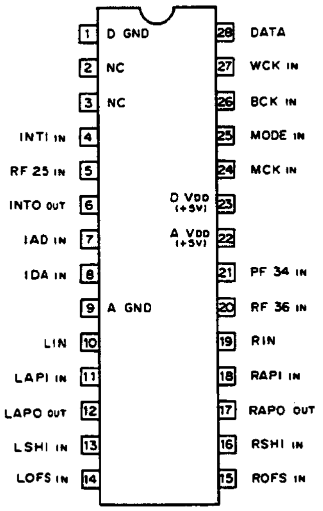
INPUT
A0 – A10 : ADDRESS BUS0-10
AREA : PCM DATA READ/WRITE AREA
AREC : AFTER REC ENABLE
DETW : INDEX DETECT WINDOW
FEEN : INDEX WRITE/ERASE AREA MODIFY (H : ON/L : OFF)
FMCK : PCM RF DATA CLOCK (736fн)
GL2H : INDEX WRITE/ERASE AREA MODIFY SELECT
INEE : INDEX SIGNAL ERASE ENABLE
INWE : INDEX SIGNAL WRITE ENABLE
MAKL : VIDEO MASK SELECT
MCLK : MASTER CLOCK (736fн)
MFEA : VIDEO MASK SELECT
MFES : FALSE MD SELECT TIMING
MODE : REC/PB SELECT (H : PB/L : REC)
NTCC : NTSC/CCIR SELECT (H : NTSC/L : CCIR)
RFSW : RF SWITCHING PULSE
TST1, 2 : TEST
XCLR : ALL CLEAR
XOE : RAM OUTPUT ENABLE
XW : RAM WRITE ENABLE

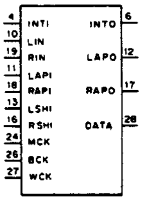
OUTPUT
DEMO : FM DEMODULATE
DETO : INDEX DETECT
DRSW : DELAYED RF SWITCHING PULSE
FERA : VIDEO MASK TIMING
FERS : FALSE HD SELECT TIMING
IEAR : INDEX WRITE/ERASE AREA
INDA : INDEX WRITE AREA
MDAR : PCM DATA READ/WRITE AREA FOR RAM CONTROLLER
RAMP : REC/PB AMP DC BIAS CONTROL SIGNAL
RARA : REC/PB AMP REC AREA
RFAR : PCM EQ AMP REC AREA
RF MD : PCM EQ AMP REC/PB MODE

INPUT/OUT
FMDT : PCM RF DATA (Bi ϕ)


LATCH PULSE GEN.
37 XOE
38 XW
ADDRESS LATCH
8
25 A0
26 A1
27 A2
28 A3
29 A4
TST1 5
TST2 4
TEST GEN.
XCLR 16
FEEN 2
GL2H 3
7 BIT COUNTER
10 BIT COUNTER
LOAD PULSE GEN.
30 A5
32 A6
2
3
RFSW 14
DRSW 10
DELAY
DECODER
4→5
33 A7
34 A8
35 A9
36 A10
MAKL 1
INEE 17
INWE 18
MODE 20
AREC 21
MFEA 22
MFES 23
NTCC 24
AREA 45
TIMING GENERATOR
5.6MHz
1/2
44 MCLK
736fH
1/2
2.9MHz
INDEX DETECTOR
13 DETO
48 DEMO
MDAR 9
RARA 11
RAMP 12
FERS 39
FERA 40
RFAR 41
RFMD 42
INDA 47
IEAR 46
FMDT 7
FMCK 8
DETW 15

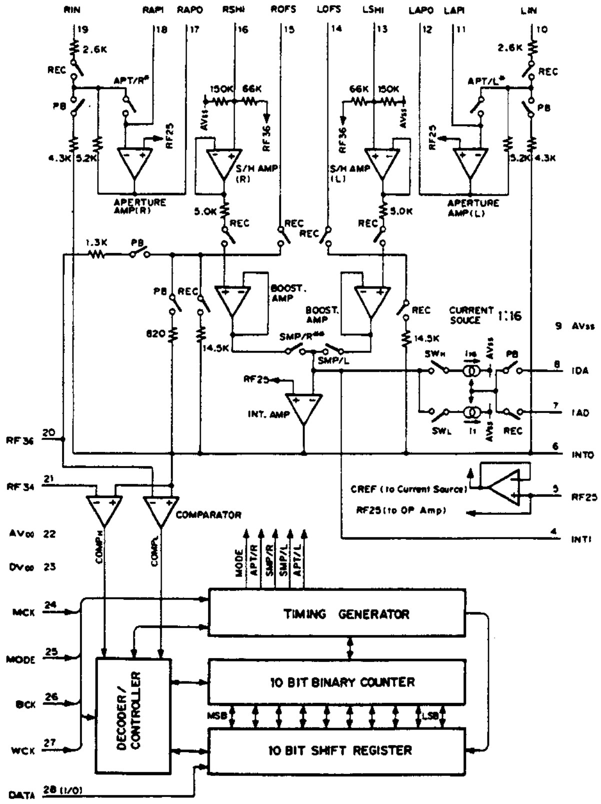
CXD1077M (SONY) MINI FLAT PACKAGE
C-MOS A/D, D/A CONVERTER FOR PCM AUDIO
— TOP VIEW —


1 D GND
2 NC
3 NC
INTI IN 4
RF 25 IN 5
INTO OUT 6
IAD IN 7
IDA IN 8
9 A GND
LIN 10
LAPI IN 11
LAPO OUT 12
LSHI IN 13
LOFS IN 14
28 DATA
27 WCK IN
26 BCK IN
25 MODE IN
24 MCK IN
D VDD (+5V) 23
A VDD (+5V) 22
21 PF 34 IN
20 RF 36 IN
19 RIN
18 RAPI IN
17 RAPO OUT
16 RSHI IN
15 ROFS IN

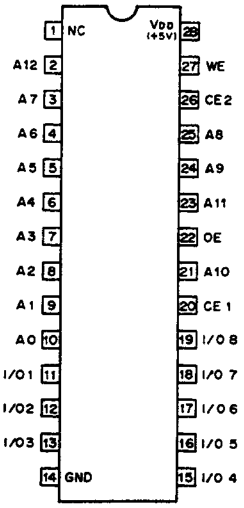

4 INTI
10 LIN
19 RIN
11 LAPI
18 RAPI
13 LSHI
16 RSHI
24 MCK
26 BCK
27 WCK
INTO 6
LAPO 12
RAPO 17
DATA 28

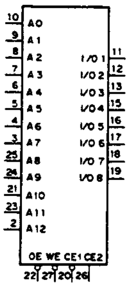
BCK ; BIT CLOCK INPUT TERMINAL
DATA ; DATA INPUT/OUTPUT TERMINAL
IAD ; INTEGRATION CURRENT SET UP TERMINAL (REC MODE)
IDA ; INTEGRATION CURRENT SET UP TERMINAL (PB MODE)
INTI ; INTEGRATION AMP INPUT TERMINAL
INTO ; INTEGRATION AMP OUTPUT TERMINAL
LAPI ; APERTURE AMP INPUT TERMINAL (L)
LAPO ; APERTURE AMP OUTPUT TERMINAL (L)
L IN ; ANALOG SIGNAL INPUT TERMINAL (L)
LOFS ; OFFSET CORRECT TERMINAL (L)
LSHI ; SAMPLE & HOLD AMP (L) INPUT TERMINAL
MCK ; MASTER CLOCK INPUT TERMINAL
MODE ; REC MODE/PB MODE SET UP TERMINAL
RAPO ; APERTURE AMP OUTPUT TERMINAL (R)
RAPI ; APERTURE AMP INPUT TERMINAL (R)
R IN ; ANALOG SIGNAL INPUT TERMINAL (R)
RF25 ; IMAGINE CONTACT ELECTORIC POTENTIAL SET UP TERMINAL
RF34 ; HIGHER RANK VOLTAGE SET UP TERMINAL
RF36 ; (REC) LOW RANK COMPARATOR VOLTAGE OR
(PB) DISCHARGE VOLTAGE SET UP TERMINAL
ROFS ; OFFSET CORRECT TERMINAL (R)
RSHI ; SAMPLE & HOLD AMP (R) INPUT TERMINAL
WCK ; WORD CLOCK INPUT TERMINAL

	(REC MODE)	(PB MODE)
* APT/L,R	EVER ON	APERTURE
** SMP/R	SAMPLING	DISCHARGE


RIN 19
RAPI 18
RAPO 17
RSHI 16
ROFS 15
LOFS 14
LSHI 13
LAPO 12
LAPI 11
LIN 10
2.6K
REC
PB
APT/R*
APT/L*
4.3K
5.2K
RF25
150K
66K
AVss
RF36
APERTURE AMP(R)
APERTURE AMP(L)
S/H AMP (R)
S/H AMP (L)
5.0K
1.3K
820
14.5K
BOOST. AMP
SMP/R**
SMP/L
CURRENT SOUCE 1:16
SWH
SWL
I16
I1
INT. AMP
9 AVss
8 IDA
7 IAD
6 INTO
5 RF25
4 INTI
CREF (to Current Source)
RF25 (to OP Amp)
RF36 20
RF34 21
COMPARATOR
COMPH
COMPL
AVDD 22
DVDD 23
MCK 24
MODE 25
BCK 26
WCK 27
DATA 28 (I/O)
MODE
APT/R
SMP/R
SMP/L
APT/L
TIMING GENERATOR
DECODER/ CONTROLLER
10 BIT BINARY COUNTER
MSB
LSB
10 BIT SHIFT REGISTER

CXK5864BM-12L (SONY) (ACCESS TIME = 120nS) FLAT PACKAGE
C-MOS 64K(8192x8)-BIT STATIC RAM
— TOP VIEW —

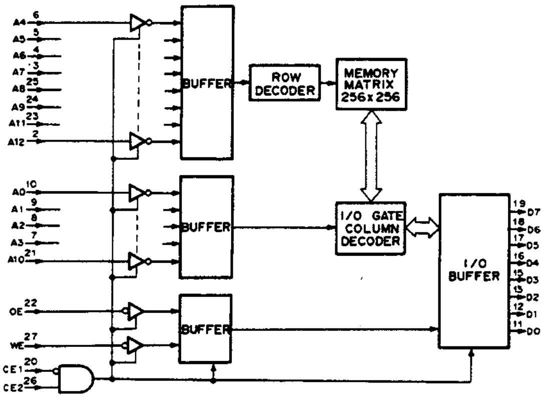

1 NC
A12 2
A7 3
A6 4
A5 5
A4 6
A3 7
A2 8
A1 9
A0 10
I/O1 11
I/O2 12
I/O3 13
14 GND
VDD (+5V) 28
27 WE
26 CE2
25 A8
24 A9
23 A11
22 OE
21 A10
20 CE 1
19 I/O 8
18 I/O 7
17 I/O 6
16 I/O 5
15 I/O 4


10 A0
9 A1
8 A2
7 A3
6 A4
5 A5
4 A6
3 A7
25 A8
24 A9
21 A10
23 A11
2 A12
I/O 1 11
I/O 2 12
I/O 3 13
I/O 4 15
I/O 5 16
I/O 6 17
I/O 7 18
I/O 8 19
OE WE CE1 CE2
22 27 20 26

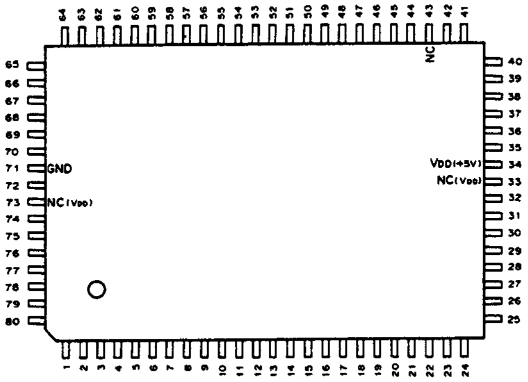
- A0-A12 ; ADDRESS INPUT
CE1, CE2 ; CHIP ENABLE INPUT
I/O1-I/O8 ; DATA INPUT/OUTPUT
OE ; OUTPUT ENABLE INPUT
WE ; WRITE ENABLE INPUT

CE1	CE2	OE	WE	MODE	I/O TERMINAL
1	X	X	X	NOT SELECT	HIGH IMPEDANCE
X	0	X	X	NOT SELECT	HIGH IMPEDANCE
0	1	1	1	OUTPUT DISABLE	HIGH IMPEDANCE
0	1	0	1	READ	OUTPUT DATA
0	1	X	0	WRITE	INPUT DATA

0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE

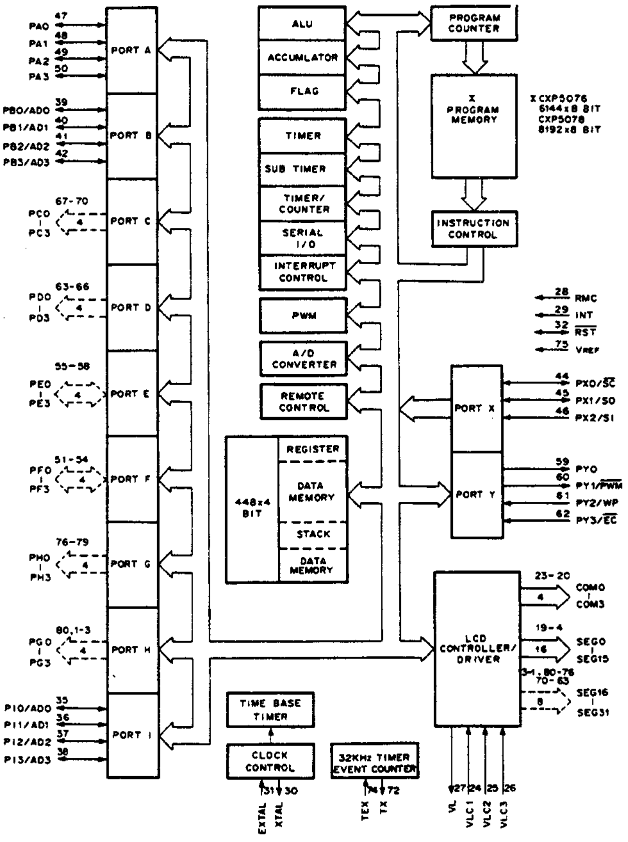

A4 6
A5 5
A6 4
A7 3
A8 25
A9 24
A11 23
A12 2
A0 10
A1 9
A2 8
A3 7
A10 21
OE 22
WE 27
CE1 20
CE2 26
BUFFER
ROW DECODER
MEMORY MATRIX 256x256
I/O GATE COLUMN DECODER
I/O BUFFER
19 D7
18 D6
17 D5
16 D4
15 D3
13 D2
12 D1
11 D0

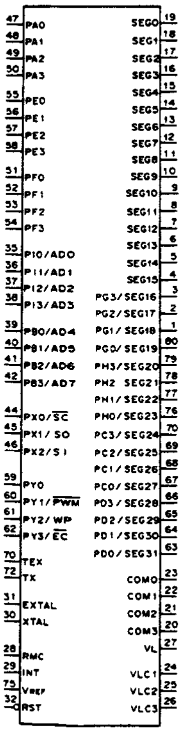
CXP5078 (SONY) FLAT PACKAGE
C-MOS 4-BIT MICROCOMPUTER
– TOP VIEW –


NC
GND
NC (VDD)
VDD (+5V)
NC (VDD)

PIN ASSIGNMENT (VDD = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	O	PG1/SEG18	21	O	COM2	41	I/O	PB2/AD6	61	I	PY2/WP
2	O	PG2/SEG17	22	O	COM1	42	I/O	PB3/AD7	62	I	PY3/$\overline{\text{EC}}$
3	O	PG3/SEG16	23	O	COM0	43	–	–	63	I/O	PD0/SEG31
4	O	SEG15	24	I	V_{LC1}	44	I/O	PX0/$\overline{\text{SC}}$	64	I/O	PD1/SEG30
5	O	SEG14	25	I	V_{LC2}	45	I/O	PX1/SO	65	I/O	PD2/SEG29
6	O	SEG13	26	I	V_{LC3}	46	I	PX2/SI	66	I/O	PD3/SEG28
7	O	SEG12	27	O	V_L	47	I/O	PA0	67	I/O	PC0/SEG27
8	O	SEG11	28	I	RMC	48	I/O	PA1	68	I/O	PC1/SEG26
9	O	SEG10	29	I	INT	49	I/O	PA2	69	I/O	PC2/SEG25
10	O	SEG9	30	O	XTAL	50	I/O	PA3	70	I/O	PC3/SEG24
11	O	SEG8	31	I	EXTAL	51	I/O	PF0	71	–	GND
12	O	SEG7	32	I/O	RST	52	I/O	PF1	72	O	TX
13	O	SEG6	33	–	–	53	I/O	PF2	73	–	–
14	O	SEG5	34	–	V_{DD}	54	I/O	PF3	74	I	TEX
15	O	SEG4	35	I/O	PI0/AD0	55	I/O	PE0	75	I	V_{REF}
16	O	SEG3	36	I/O	PI1/AD1	56	I/O	PE1	76	O	PH0/SEG23
17	O	SEG2	37	I/O	PI2/AD2	57	I/O	PE2	77	O	PH1/SEG22
18	O	SEG1	38	I/O	PI3/AD3	58	I/O	PE3	78	O	PH2/SEG21
19	O	SEG0	39	I/O	PB0/AD4	59	O	PY0	79	O	PH3/SEG20
20	O	COM3	40	I/O	PB1/AD5	60	O	PY1/$\overline{\text{PWM}}$	80	O	PG0/SEG19


PA0
PA1
PA2
PA3
PORT A
PB0/AD0
PB1/AD1
PB2/AD2
PB3/AD3
PORT B
67-70
PC0
PC3
PORT C
63-66
PD0
PD3
PORT D
55-58
PE0
PE3
PORT E
51-54
PF0
PF3
PORT F
76-79
PH0
PH3
PORT G
80, 1-3
PG0
PG3
PORT H
PI0/AD0
PI1/AD1
PI2/AD2
PI3/AD3
PORT I
ALU
ACCUMULATOR
FLAG
TIMER
SUB TIMER
TIMER/COUNTER
SERIAL I/O
INTERRUPT CONTROL
PWM
A/D CONVERTER
REMOTE CONTROL
PROGRAM COUNTER
X PROGRAM MEMORY
X CXP5076 6144x8 BIT
CXP5078 8192x8 BIT
INSTRUCTION CONTROL
RMC
INT
RST
VREF
PORT X
PX0/SC
PX1/SO
PX2/SI
PORT Y
PY0
PY1/PWM
PY2/WP
PY3/EC
448x4 BIT
REGISTER
DATA MEMORY
STACK
DATA MEMORY
LCD CONTROLLER/DRIVER
23-20
COM0
COM3
19-4
SEG0
SEG15
3-1, 80-76 70-63
SEG16
SEG31
TIME BASE TIMER
CLOCK CONTROL
32KHz TIMER EVENT COUNTER
EXTAL
XTAL
TEX
TX
VL
VLC1
VLC2
VLC3



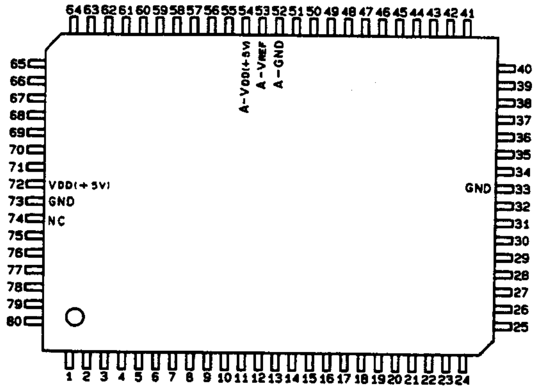
INPUT
AD0 – AD7 : A/D CONVERT DATA INPUTS
EC : EVENT COUNT CLOCK INPUT
EXTAL : CLOCK INPUT
INT : INTERRUPT INPUT
RMC : REMOTE CONTROL INPUT
SC : SERIAL CLOCK INPUT
SI : SERIAL INPUT
TEX : 32KHz TIMER/COUNTER CLOCK INPUT
V_{LC1} – V_{LC3} : POWER FOR LCD
V_{REF} : REFERRENCE VOLTAGE INPUT
WP : WAKE UP INPUT

OUTPUT
COM0 – COM3 : COMON OUTPUTS
PC0 – PC3 : PORT C
PD0 – PD3 : PORT D
PG0 – PG3 : PORT G
PH0 – PH3 : PORT H
PWM : PWM GENERATOR OUTPUT
SEG0 – SEG31 : SEGMENT OUTPUTS
SO : SERIAL OUTPUT
TX : 32KHz TIMER/COUNTER CLOCK OUTPUT
V_L : CUT OFF
XTAL : CLOCK OUTPUT

INPUT/OUTPUT
PA0 – PA3 : PORT A
PB0 – PB3 : PORT B
PE0 – PE3 : PORT E
PF0 – PF3 : PORT F
PI0 – PI3 : PORT I
PX0 – PX3 : PORT X
PY0 – PY3 : PORT Y
RST : RESET

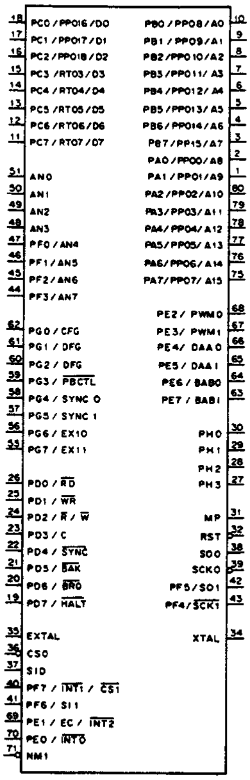
CXP80116-Q (SONY) FLAT PACKAGE

C-MOS 8-BIT MICROCOMPUTER
– TOP VIEW –


64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41
A-VDD(+5V)
A-VREF
A-GND
65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
VDD(+5V)
GND
NC
40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25
GND
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

(V_{DD} = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	O	PA1/PPO1/A9	41	I	PF6/SI1
2	O	PA0/PPO0/A8	42	I/O	PF5/SO1
3	O	PB7/PPO15/A7	43	I,I/O	PF4/$\overline{\text{SCK1}}$
4	O	PB6/PPO14/A6	44	I	PF3/AN7
5	O	PB5/PPO13/A5	45	I	PF2/AN6
6	O	PB4/PPO12/A4	46	I	PF1/AN5
7	O	PB3/PPO11/A3	47	I	PF0/AN4
8	O	PB2/PPO10/A2	48	I	AN3
9	O	PB1/PPO9/A1	49	I	AN2
10	O	PB0/PPO8/A0	50	I	AN1
11	I/O,O,I/O	PC7/RTO7/D7	51	I	AN0
12	I/O,O,I/O	PC6/RTO6/D6	52	–	A-GND
13	I/O,O,I/O	PC5/RTO5/D5	53	–	A-V_{REF}
14	I/O,O,I/O	PC4/RTO4/D4	54	–	A-V_{DD}
15	I/O,O,I/O	PC3/RTO3/D3	55	I	PG7/EXI1
16	I/O,O,I/O	PC2/PPO18/D2	56	I	PG6/EXI0
17	I/O,O,I/O	PC1/PPO17/D1	57	I	PG5/SYNC1
18	I/O,O,I/O	PC0/PPO16/D0	58	I	PG4/SYNC0
19	I/O,O	PD7/$\overline{\text{HALT}}$	59	I	PG3/$\overline{\text{PBCTL}}$
20	I/O,O	PD6/$\overline{\text{BRQ}}$	60	I	PG2/DPG
21	I/O,O	PD5/$\overline{\text{BAK}}$	61	I	PG1/DFG
22	I/O,O	PD4/$\overline{\text{SYNC}}$	62	I	PG0/CFG
23	I/O,O	PD3/C	63	O	PE7/DAB1
24	I/O,O	PD2/R/$\overline{\text{W}}$	64	O	PE6/DAB0
25	I/O,O	PD1/$\overline{\text{WR}}$	65	O	PE5/DAA1
26	I/O,O	PD0/$\overline{\text{RD}}$	66	O	PE4/DAA0
27	O	PH3	67	O	PE3/PWM1
28	O	PH2	68	O	PE2/PWM0
29	O	PH1	69	I	PE1/$\overline{\text{EC}}$/$\overline{\text{INT2}}$
30	O	PH0	70	I	PE0/$\overline{\text{INT0}}$
31	I	MP	71	I	$\overline{\text{NMI}}$
32	I/O	RST	72	–	V_{DD}
33	–	GND	73	–	GND
34	O	XTAL	74	–	NC
35	I	EXTAL	75	O	PA7/PPO7/A15
36	I	CS0	76	O	PA6/PPO6/A14
37	I	SI0	77	O	PA5/PPO5/A13
38	O	SO0	78	O	PA4/PPO4/A12
39	I/O	SCK0	79	O	PA3/PPO3/A11
40	I	PF7/$\overline{\text{INT1}}$/$\overline{\text{CS1}}$	80	O	PA2/PPO2/A10


18 PC0 / PPO16 / D0
17 PC1 / PPO17 / D1
16 PC2 / PPO18 / D2
15 PC3 / RTO3 / D3
14 PC4 / RTO4 / D4
13 PC5 / RTO5 / D5
12 PC6 / RTO6 / D6
11 PC7 / RTO7 / D7
51 AN0
50 AN1
49 AN2
48 AN3
47 PF0 / AN4
46 PF1 / AN5
45 PF2 / AN6
44 PF3 / AN7
62 PG0 / CFG
61 PG1 / DFG
60 PG2 / DFG
59 PG3 / PBCTL
58 PG4 / SYNC 0
57 PG5 / SYNC 1
56 PG6 / EX10
55 PG7 / EX11
26 PD0 / RD
25 PD1 / WR
24 PD2 / R / W
23 PD3 / C
22 PD4 / SYNC
21 PD5 / BAK
20 PD6 / BRQ
19 PD7 / HALT
35 EXTAL
36 CS0
37 SI0
40 PF7 / INT1 / CS1
41 PF6 / SI1
69 PE1 / EC / INT2
70 PE0 / INT0
71 NM1
PB0 / PPO8 / A0 10
PB1 / PPO9 / A1 9
PB2 / PPO10 / A2 8
PB3 / PPO11 / A3 7
PB4 / PPO12 / A4 6
PB5 / PPO13 / A5 5
PB6 / PPO14 / A6 4
PB7 / PP15 / A7 3
PA0 / PPO0 / A8 2
PA1 / PPO1 / A9 1
PA2 / PPO2 / A10 80
PA3 / PPO3 / A11 79
PA4 / PPO4 / A12 78
PA5 / PPO5 / A13 77
PA6 / PPO6 / A14 76
PA7 / PPO7 / A15 75
PE2 / PWM0 68
PE3 / PWM1 67
PE4 / DAA0 66
PE5 / DAA1 65
PE6 / BAB0 64
PE7 / BAB1 63
PH0 30
PH1 29
PH2 28
PH3 27
MP 31
RST 32
SO0 38
SCK0 39
PF5 / SO1 42
PF4 / SCK1 43
XTAL 34

INPUT

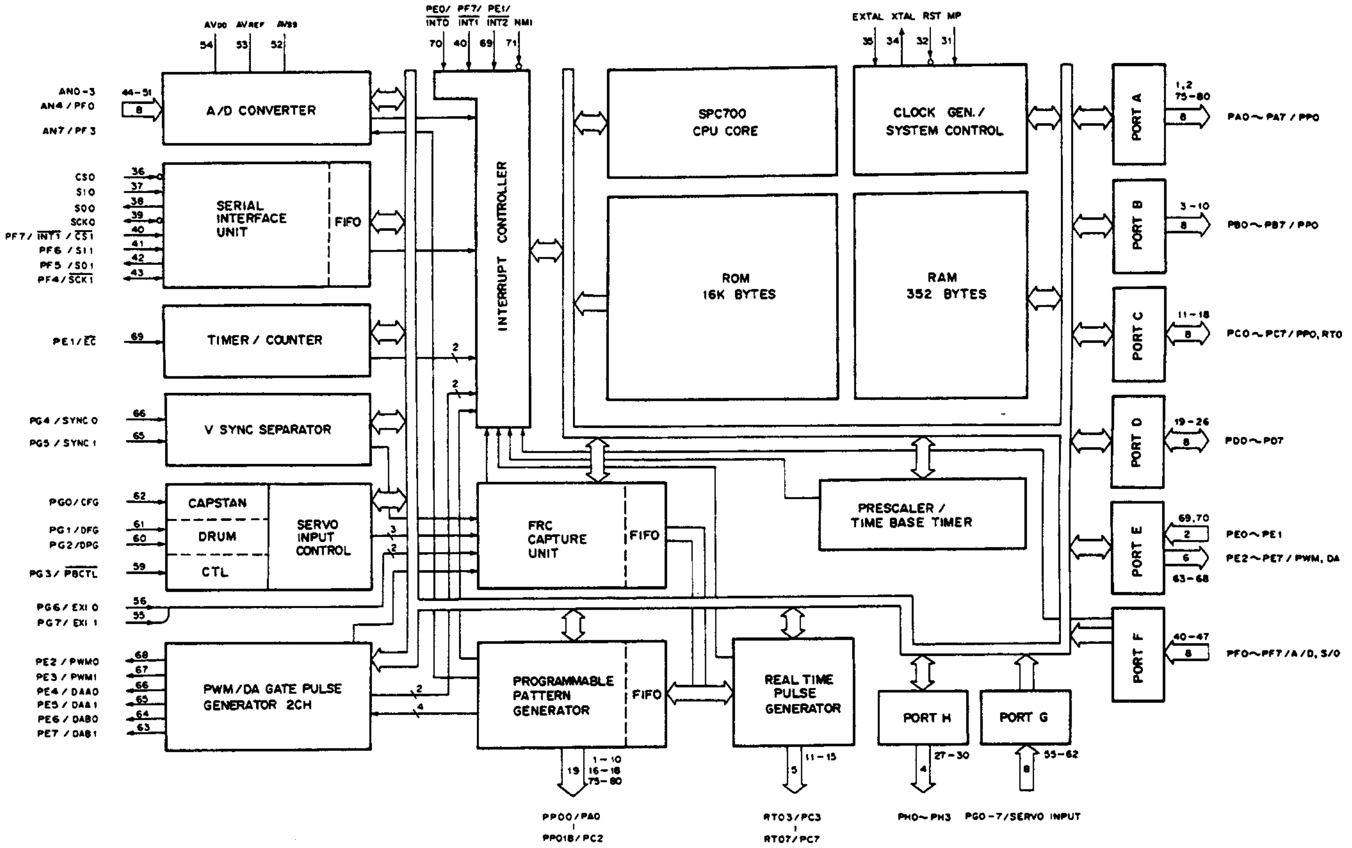
AN0 – AN7 : ANALOG INPUTS
BRQ : BUS REQUEST INPUT
CFG : CAPSTAN FG INPUT
CS0.1 : CHIP SELECT INPUTS
DFG : DRUM FG INPUT
DPG : DRUM PG INPUT
EC : EVENT INPUT
EXI0.1 : EXTERNAL INPUTS
EXTAL : SYSTEM CLOCK GENERATE JOINT
HALT : CPU STOP INPUT
INT0 – INT2 : EXTERNAL OFFERING INPUTS
MP : MICRO PROSESSOR MODE INPUT
NMI : NONMASKABLE OFFERING INPUT
PBCTL : PB CTL PULSE INPUT
PE0.1 : PORT E INPUTS
PF0 – PF7 : PORT F INPUTS
PG0 – PG7 : PORT G INPUTS
SI0.1 : SERIAL DATA INPUTS
SYNC0.1 : COMPOSITE SYNC INPUTS

OUTPUT

A0 – A15 : ADDRESS BUS OUTPUTS
BAK : BUS ACKNOWLEGE OUTPUT
C : TIMING SIGNAL OUTPUT
DAA0.1 : DA GATE PULSE OUTPUTS
DAB0.1 : DA GATE PULSE OUTPUTS
PA0 – PA7 : PORT A OUTPUTS
PB0 – PB7 : PORT B OUTPUTS
PE2 – PE7 : PORT E OUTPUTS
PH0 – PH3 : PORT H OUTPUTS
PPO0 – PPO18 : PROGRAMMABLE PATTERN GENERATOR OUTPUTS
PWM0.1 : PWM OUTPUTS
R/W : CPU MACHINE SYCLE
RD : READ
RTO3 – RTO7 : REAL TIME PULSE OUTPUTS
SO0.1 : SERIAL DATA OUTPUTS
SYNC : SYNC
WR : WRITE
XTAL : SYSTEM CLOCK GENERATER OUTPUT

INPUT/OUTPUT

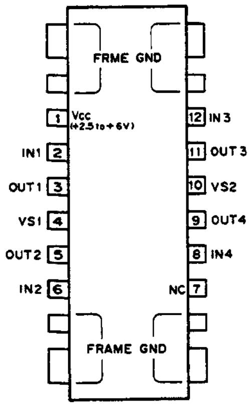
D0 – D7 : DATA BUS
PC0 – PC7 : PORT C
PD0 – PD7 : PORT D
RST : RESET
SCK0.1 : SERIAL CLOCK

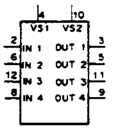

AVDD AVREF AVSS
54 53 52
PE0/ $\overline{\text{INT0}}$ PF7/ $\overline{\text{INT1}}$ PE1/ $\overline{\text{INT2}}$ NMI
70 40 69 71
EXTAL XTAL RST MP
35 34 32 31
AN0-3
AN4 / PF0
AN7 / PF3
44-51
8
A/D CONVERTER
CS0
SI0
SO0
SCK0
PF7/ $\overline{\text{INT1}}$ / $\overline{\text{CS1}}$
PF6 / SI1
PF5 / SO1
PF4 / $\overline{\text{SCK1}}$
36
37
38
39
40
41
42
43
SERIAL INTERFACE UNIT
FIFO
PE1/ $\overline{\text{EC}}$
69
TIMER / COUNTER
PG4 / SYNC 0
PG5 / SYNC 1
66
65
V SYNC SEPARATOR
PG0 / CFG
PG1 / DFG
PG2 / DPG
PG3 / $\overline{\text{PBCTL}}$
62
61
60
59
CAPSTAN
DRUM
CTL
SERVO INPUT CONTROL
PG6 / EXI 0
PG7 / EXI 1
56
55
PE2 / PWM0
PE3 / PWM1
PE4 / DAA0
PE5 / DAA1
PE6 / DAB0
PE7 / DAB1
68
67
66
65
64
63
PWM/DA GATE PULSE GENERATOR 2CH
INTERRUPT CONTROLLER
2
2
3
2
2
4
SPC700 CPU CORE
CLOCK GEN. / SYSTEM CONTROL
ROM 16K BYTES
RAM 352 BYTES
FRC CAPTURE UNIT
FIFO
PRESCALER / TIME BASE TIMER
PROGRAMMABLE PATTERN GENERATOR
FIFO
REAL TIME PULSE GENERATOR
PORT H
PORT G
19
1-10
16-18
75-80
PP00/PA0
PP018/PC2
5
11-15
RT03/PC3
RT07/PC7
4
27-30
PH0~PH3
8
55-62
PG0-7/SERVO INPUT
PORT A
1,2
75-80
8
PA0~PA7 / PP0
PORT B
3-10
8
PB0~PB7 / PP0
PORT C
11-18
8
PC0~PC7 / PP0, RT0
PORT D
19-26
8
PD0~PD7
PORT E
69,70
2
PE0~PE1
6
PE2~PE7 / PWM, DA
63-68
PORT F
40-47
8
PF0~PF7 / A/D, S/0

LB1631M (SANYO) FLAT PACKAGE

BI-DIRECTIONAL MOTOR DRIVER

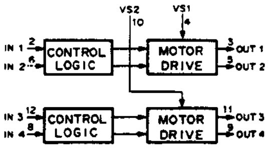
– TOP VIEW –


FRME GND
1 Vcc (+2.5 to +6V)
IN1 2
OUT1 3
VS1 4
OUT2 5
IN2 6
NC 7
8 IN4
9 OUT4
10 VS2
11 OUT3
12 IN3
FRAME GND


4
10
VS1
VS2
2
IN 1
6
IN 2
12
IN 3
8
IN 4
OUT 1
3
OUT 2
5
OUT 3
11
OUT 4
9

IN 1,3	IN 2,4	OUT 1,3	OUT 2,4	MODE
0	0	Hi-Z	Hi-Z	NO OPERATION
0	1	0	1	REVERSE
1	0	1	0	FORWARD
1	1	0	0	BRAKE

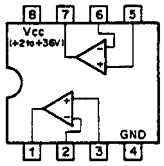
0 : LOW LEVEL
1 : HIGH LEVEL
Hi-Z: HIGH IMPEDANCE


VS2
10
VS1
4
IN 1
2
IN 2
6
CONTROL LOGIC
MOTOR DRIVE
3
OUT 1
5
OUT 2
IN 3
12
IN 4
8
CONTROL LOGIC
MOTOR DRIVE
11
OUT 3
9
OUT 4

LM2903M (RAYTHEON) FLAT PACKAGE
uPC393G2 (NEC) FLAT PACKAGE

DUAL VOLTAGE COMPARATORS

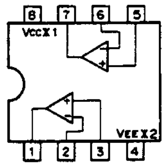
– TOP VIEW –


8 7 6 5
Vcc (+2 to +36V)
GND
1 2 3 4

LM358M (MOTOROLA) FLAT PACKAGE

DUAL OPERATIONAL AMPLIFIERS

– TOP VIEW –

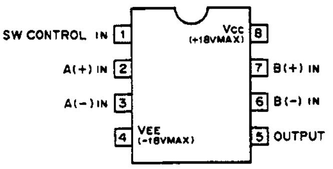

8 7 6 5
VccX1
VEEX2
1 2 3 4

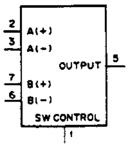
	Vcc*1	VEE*2
SINGLE SUPPLY	+3 to +32V	GND
SPLIT SUPPLIES	+1.5 to +16V	– 1.5 to – 16V

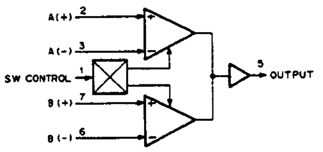
M5201FP (MITSUBISHI) FLAT PACKAGE

DUAL OPERATIONAL AMPLIFIER WITH SWITCHED OUTPUT

- TOP VIEW -


SW CONTROL IN 1
A(+) IN 2
A(-) IN 3
4 VEE (-18VMAX)
Vcc (+18VMAX) 8
7 B(+) IN
6 B(-) IN
5 OUTPUT

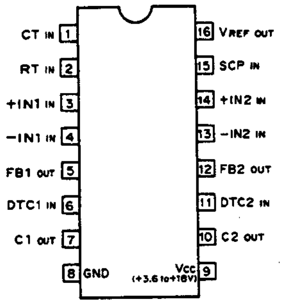

2 A(+)
3 A(-)
7 B(+)
6 B(-)
OUTPUT 5
SW CONTROL
1

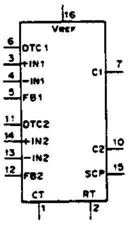

A(+) 2
A(-) 3
SW CONTROL 1
B(+) 7
B(-) 6
5 OUTPUT

MB3775PF (FUJITSU) FLAT PACKAGE

DUAL PWM POWER CONTROLLER (DC-DC CONVERTER)

- TOP VIEW -


CT IN 1
RT IN 2
+IN1 IN 3
-IN1 IN 4
FB1 OUT 5
DTC1 IN 6
C1 OUT 7
8 GND
16 VREF OUT
15 SCP IN
14 +IN2 IN
13 -IN2 IN
12 FB2 OUT
11 DTC2 IN
10 C2 OUT
Vcc (+3.6 to+18V) 9

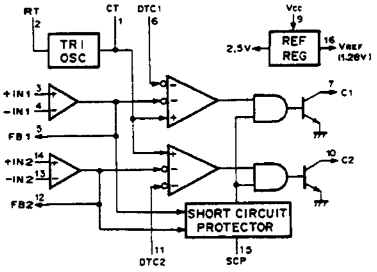

16 VREF
6 DTC1
3 +IN1
4 -IN1
5 FB1
11 DTC2
14 +IN2
13 -IN2
12 FB2
C1 7
C2 10
SCP 15
CT 1
RT 2

INPUT

+IN	: ERROR AMP (+)
-IN	: ERROR AMP (-)
CT	: CONSTANT TIME
DTC	: DEAD TIME CONTROL
RT	: RESPONSE TIME
SCP	: SHORT CIRCUIT PROTECT

OUTPUT

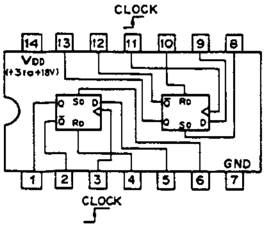
C	: COLLECTOR
FB	: FEEDBACK


RT 2
CT 1
DTC1 6
TRI OSC
Vcc 9
REF REG
2.5V
16 VREF (1.28V)
+IN1 3
-IN1 4
FB1 5
+IN2 14
-IN2 13
FB2 12
7 C1
10 C2
SHORT CIRCUIT PROTECTOR
11 DTC2
15 SCP

MC14013BF (MOTOROLA) FLAT PACKAGE

C-MOS D-TYPE FLIP-FLOP WITH DIRECT SET/RESET

- TOP VIEW -


CLOCK
14 13 12 11 10 9 8
VDD (+3 to+18V)
SD D Q
Q̄ RD
RD Q
SD D Q̄
GND
1 2 3 4 5 6 7
CLOCK

DIRECT R-S FLIP FLOP

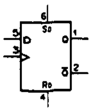
SD	RD	Q	Q̄
0	0	Qn	Q̄n
0	1	0	1
1	0	1	0
1	1	1	1

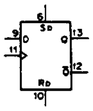
D-TYPE FLIP FLOP

CKn	CKn+1
D	Q
0	0
1	1

0:LOW LEVEL
1:HIGH LEVEL

CLOCK CK; ↑
CKn; BEFORE CLOCK
CKn+1; AFTER CLOCK

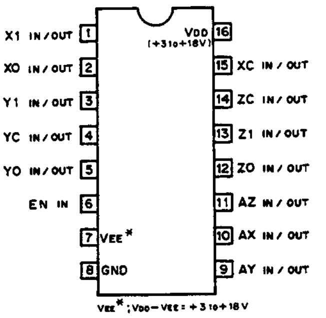

6
SD
5 D
3
Q 1
Q̄ 2
RD
4


8
SD
9 D
11
Q 13
Q̄ 12
RD
10

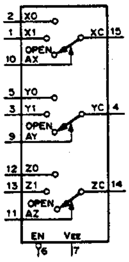
MC14053BF (MOTOROLA) FLAT PACKAGE
uPD4053BG (NEC) FLAT PACKAGE

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER

- TOP VIEW -


X1 IN/OUT 1
X0 IN/OUT 2
Y1 IN/OUT 3
YC IN/OUT 4
Y0 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+3 to+18V) 16
15 XC IN/OUT
14 ZC IN/OUT
13 Z1 IN/OUT
12 Z0 IN/OUT
11 AZ IN/OUT
10 AX IN/OUT
9 AY IN/OUT

VEE*; VDD－VEE = +3 to+18V


2 X0
1 X1
10 AX
OPEN
XC 15
5 Y0
3 Y1
9 AY
OPEN
YC 4
12 Z0
13 Z1
11 AZ
OPEN
ZC 14
EN
VEE
6
7

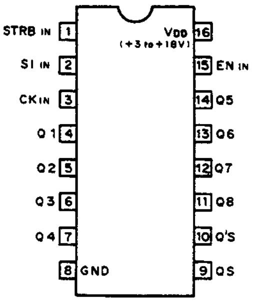
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

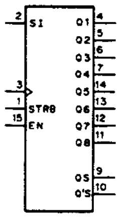
CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z,)	
0	0	0
0	1	1
1	X	OPEN

MC14094BF (MOTOROLA)

C-MOS 8-STAGE SHIFT-AND-STORE BUS REGISTER

- TOP VIEW -


STRB IN 1
SI IN 2
CK IN 3
Q1 4
Q2 5
Q3 6
Q4 7
8 GND
VDD (+3 to+18V) 16
15 EN IN
14 Q5
13 Q6
12 Q7
11 Q8
10 Q'S
9 QS


2 SI
3
1 STRB
15 EN
Q1 4
Q2 5
Q3 6
Q4 7
Q5 14
Q6 13
Q7 12
Q8 11
QS 9
Q'S 10

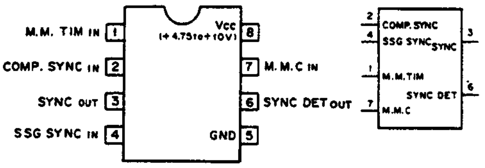
SI ; SERIAL DATA INPUT
CK ; CLOCK INPUT
STRB ; STROBE INPUT
EN ; OUTPUT ENABLE INPUT
Q1~Q8 ; PARALLEL DATA OUTPUTS
QS ,Q'S ; SERIAL DATA OUTPUTS

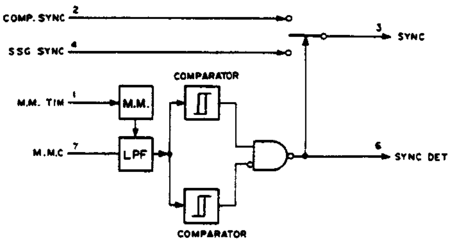
INPUTS				PARALLEL OUT		SERIAL OUT	
CK	EN	STRB	SI	Q1	Qn	QS	Q'S
↑	0	X	X	HI-Z	HI-Z	Q7	NC
↓	0	X	X	HI-Z	HI-Z	NC	Q7
↑	1	0	X	NC	NC	Q7	NC
↑	1	1	0	0	Qn-1	Q7	NC
↑	1	1	1	1	Qn-1	Q7	NC
↓	1	1	1	NC	NC	NC	Q7

1 ; HIGH
0 ; LOW
X ; DON'T CARE

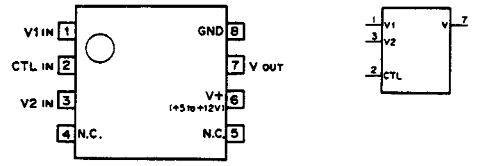
HI-Z ; HIGH IMPEDANCE
NC ; NO CHANGE

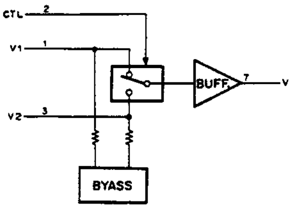
NJM2230M (JRC) FLAT PACKAGE
VIDEO SIGNAL DETECTOR
- TOP VIEW -


M.M. TIM IN 1
COMP. SYNC IN 2
SYNC OUT 3
SSG SYNC IN 4
Vcc (+4.75to+10V) 8
7 M.M.C IN
6 SYNC DET OUT
GND 5
COMP. SYNC
SSG SYNC
SYNC
M.M.TIM
SYNC DET
M.M.C


COMP. SYNC 2
SSG SYNC 4
3 SYNC
M.M. TIM 1
M.M.
M.M.C 7
LPF
COMPARATOR
COMPARATOR
6 SYNC DET

NJM2233AM (JRC) FLAT PACKAGE
2-INPUT SIGNAL VIDEO SWITCH
- TOP VIEW -

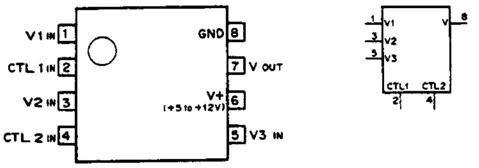

V1 IN 1
CTL IN 2
V2 IN 3
4 N.C.
GND 8
7 V OUT
V+ (+5to+12V) 6
N.C. 5
V1
V2
CTL
V

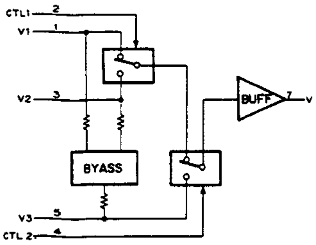

CTL 2
V1 1
V2 3
BUFF
7 V
BYASS

CTL	V
0	V1
1	V2

0 : LOW LEVEL
1 : HIGH LEVEL

NJM2234M (JRC) FLAT PACKAGE
3-INPUT SIGNAL VIDEO SWITCH
- TOP VIEW -

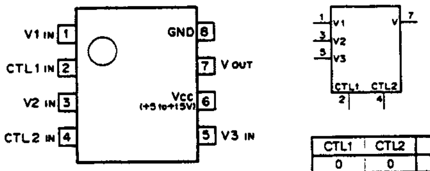

V1 IN 1
CTL 1 IN 2
V2 IN 3
CTL 2 IN 4
GND 8
7 V OUT
V+ (+5to+12V) 6
5 V3 IN
V1
V2
V3
V 8
CTL1 CTL2


CTL1 2
V1 1
V2 3
BUFF
7 V
BYASS
V3 5
CTL 2 4

CTL1	CTL2	V
0	0	V1
1	0	V2
X	1	V3

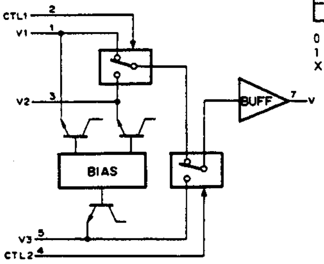
0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

NJM2235M (JRC) FLAT PACKAGE
3-INPUT VIDEO SIGNAL SWITCH
- TOP VIEW -

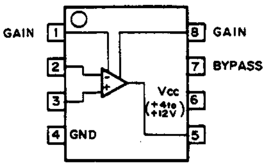

V1 IN 1
CTL1 IN 2
V2 IN 3
CTL2 IN 4
GND 8
7 V OUT
Vcc (+5to+15V) 6
5 V3 IN
V1
V2
V3
V 7
CTL1 CTL2

CTL1	CTL2	V
0	0	V1
1	0	V2
X	1	V3

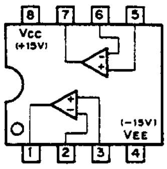
0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE


CTL1 2
V1 1
V2 3
BUFF
7 V
BIAS
V3 5
CTL2 4

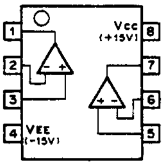
NJM386M (JRC) FLAT PACKAGE
AUDIO POWER AMPLIFIER
- TOP VIEW -


GAIN 1
2
3
4 GND
8 GAIN
7 BYPASS
Vcc (+4to+12V) 6
5

RC4558M (RAYTHEON) FLAT PACKAGE
uPC4558G2 (NEC) FLAT PACKAGE
OPERATIONAL AMPLIFIER
- TOP VIEW -


8 7 6 5
Vcc (+15V)
(-15V) VEE
1 2 3 4

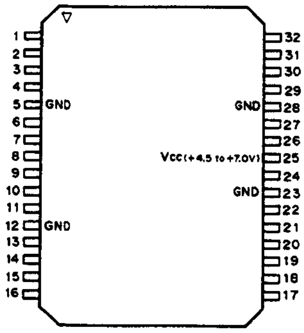
RC4560M (RAYTHEON) FLAT PACKAGE
OPERATIONAL AMPLIFIER
- TOP VIEW -


1
2
3
4 VEE (-15V)
Vcc (+15V) 8
7
6
5

SBX1505-21 (SONY)

AFM AUDIO SIGNAL PROCESSOR FOR 8mm VTR

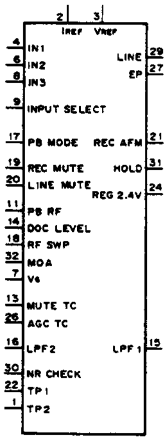
- TOP VIEW -



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
GND
GND
32
31
30
29
28
27
26
25
24
23
22
21
20
19
18
17
GND
Vcc(+4.5 to+7.0V)
GND

(Vcc=+4.5Vto+7.0V)

PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGANL	PIN NO.	I/O	SYGNAL
1	I	TP2	12	–	GND	23	–	GND
2	I	IREF	13	I	MUTE TC	24	O	REG 4.2V
3	I	VREF	14	I	DOC LEVEL	25	–	Vcc
4	I	IN1	15	O	LPF1	26	I	AGC TC
5	–	GND	16	I	LPF2	27	O	EP
6	I	IN2	17	I	PB MODE	28	–	GND
7	I	Va	18	I	RF SWP	29	O	LINE
8	I	IN3	19	I	REC MUTE	30	I	NR CHECK
9	I	INPUT SELECT	20	I	LINE MUTE	31	O	HOLD
10	I	—	·21	O	REC AFM	32	I	MOA
11	I	PB RF	22	I	TP1			



2
3
IREF
VREF
4 IN1
6 IN2
8 IN3
9 INPUT SELECT
17 PB MODE
19 REC MUTE
20 LINE MUTE
11 PB RF
14 DOC LEVEL
18 RF SWP
32 MOA
7 Va
13 MUTE TC
26 AGC TC
16 LPF2
30 NR CHECK
22 TP1
1 TP2
LINE 29
EP 27
REC AFM 21
HOLD 31
REG 2.4V 24
LPF1 15

INPUT

AGC TC ; ATTACK AND RECOVERY TIME CONSTANT SIGNAL

DOC LEVEL ; DOC DETECT LEVEL CONTROL FOR TWICE SPEED TIME PB

IN1 – IN3 ; AUDIO SIGNAL INPUT FROM LINE/TUNER/CAMERA

INPUT SELECT ; SELECT CONTROL SIGNAL (L : IN1/HiZ : IN2/H : IN3)

I REF ; REFERENCE CURRENT FOR NOIS REDUCTION DETECTOR

LINE MUTE ; MUTE CONTROL SIGNAL OF LINE/EP OUTPUT

LPF2 ; LPF SIGNAL FOR DEMODULATOR OUTPUT

MOA ; SIGNAL INPUT FOR NR CIRCUIT

MUTE TC ; MUTING TIME CONSTANT SIGNAL FOR TWICE SPEED TIME PB

NR CHECK ; CHECK IC

PB MODE ; SWITCH CONTROL SIGNAL (H : PB/L : REC)

PB RF ; 40dB AMPLIFIER OF PB FM WAVE

REC MUTE ; SUSPEND MODULATING CONTROL SIGNAL

RF SWP ; TIMING PULSE FOR PRIOR LEVEL HOLD MODE

TP1, TP2 ; CHECK IC

V_G ; NEUTRAL POTENTIAL (REG 4.2V/2) MAXIMUM OUTPUT CURRENT +1mA, –200uA

V_{REF} ; VCA REFERENCE VOLTAGE FOR NOISE REDUCTION AND AGC AMP

OUTPUT

EP ; EARPHONE AMPLIFIER SIGNAL

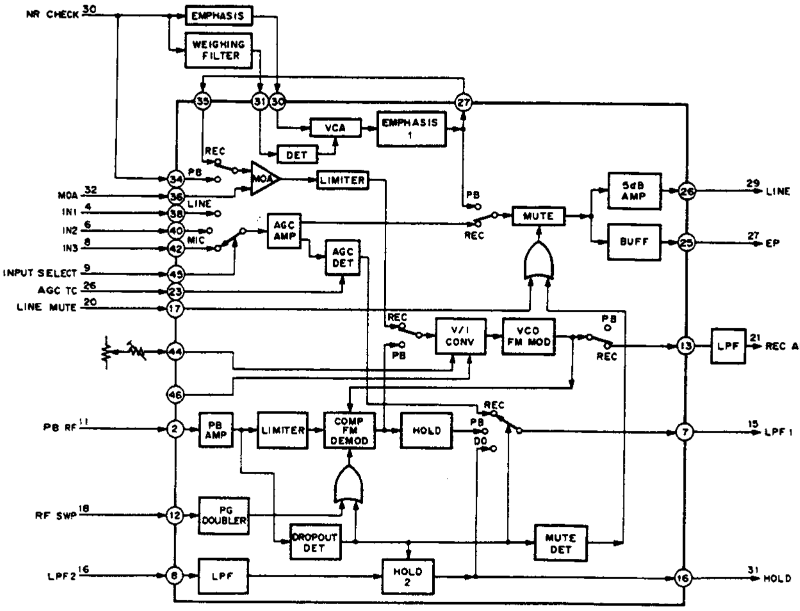
HOLD ; PRIOR LEVEL HOLD MODE SIGNAL

LINE ; LINE AMPLIFIER SIGNAL (–5dB GAIN)

LPF1 ; DEMODULATOR SIGNAL

REC AFM ; LPF SIGNAL

REG 4.2V ; 4.2V REGULATOR

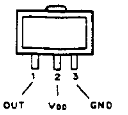


NR CHECK 30
EMPHASIS
WEIGHING FILTER
35
31
30
27
VCA
EMPHASIS 1
DET
REC
PB
MOA
LIMITER
MOA 32
IN1 4
IN2 6
IN3 8
INPUT SELECT 9
AGC TC 26
LINE MUTE 20
34
36
38
40
42
45
23
17
44
46
LINE
MIC
AGC AMP
AGC DET
PB
REC
MUTE
5dB AMP
BUFF
26
25
29 LINE
27 EP
REC
PB
V/I CONV
VCO FM MOD
PB
REC
13
LPF
21 REC AFM
PB RF 11
2
PB AMP
LIMITER
COMP FM DEMOD
HOLD
REC
PB
DO
7
15 LPF1
RF SWP 18
12
PG DOUBLER
DROPOUT DET
MUTE DET
LPF2 16
6
LPF
HOLD 2
16
31 HOLD

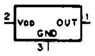
S-8054ALR-LN (SEIKO)

C-MOS VOLTAGE DETECTOR

- TOP VIEW -



1
2
3
OUT
VDD
GND

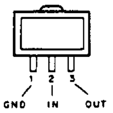


2
VDD
OUT
1
GND
3

S-812 ? ? ? ?- ? ? (SEIKO) FLAT PACKAGE

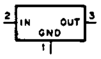
THREE TERMINAL POSITIVE VOLTAGE REGULATOR

- TOP VIEW -



1
2
3
GND
IN
OUT

OUTPUT VOLTAGE	S–812????–??
+2.5V	S–81225AG–RH
+3.0V	S–81230AG–RB
+5.0V	S–81250HG–RD

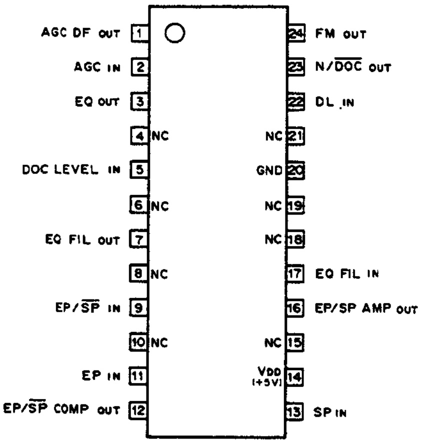


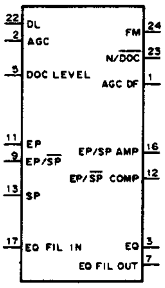
2
IN
OUT
3
GND
1

TA8607F (TOSHIBA) FLAT PACKAGE

C-MOS PB FM PROCESSOR FOR VTR

– TOP VIEW –


AGC DF OUT 1
AGC IN 2
EQ OUT 3
4 NC
DOC LEVEL IN 5
6 NC
EQ FIL OUT 7
8 NC
EP/$\overline{SP}$ IN 9
10 NC
EP IN 11
EP/$\overline{SP}$ COMP OUT 12
24 FM OUT
23 N/$\overline{DOC}$ OUT
22 DL IN
21 NC
20 GND
19 NC
18 NC
17 EQ FIL IN
16 EP/SP AMP OUT
15 NC
14 VDD (+5V)
13 SP IN


22 DL
2 AGC
5 DOC LEVEL
11 EP
9 EP/$\overline{SP}$
13 SP
17 EQ FIL IN
FM 24
N/$\overline{DOC}$ 23
AGC DF 1
EP/SP AMP 16
EP/$\overline{SP}$ COMP 12
EQ 3
EQ FIL OUT 7

INPUT

AGC : AGC AMP SIGNAL

DL : 1H DELAY LEVEL SIGNAL

DOC : DOC DETECT LEVEL ADJUSTMENT

EP : EP INPUT SIGNAL

EP/$\overline{SP}$: CONTROL SIGNAL (H : EP/L : SP)

EQ FIL IN : EQUALIZER FILTER SIGNAL

SP : SP INPUT SIGNAL

OUTPUT

AGC DF : AGC DETECT FILTER SIGNAL

EP/$\overline{SP}$ AMP : EP/SP 12dB AMPLIFIER SIGNAL

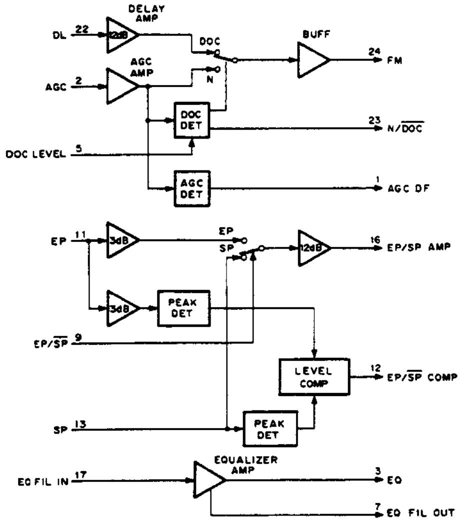
EP/SP COMP : EP/SP LEVEL COMPARATE SIGNAL

EQ : EQUALIZER AMP SIGNAL

EQ FIL OUT : EQUALIZER FILTER SIGNAL

FM : FM OUTPUT SIGNAL

N/$\overline{DOC}$: DETECT SIGNAL (H : NORMAL/L : DOC)

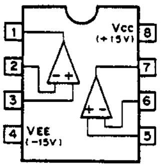

DELAY AMP
DL 22
12dB
DOC
N
BUFF
24 FM
AGC AMP
AGC 2
DOC DET
23 N/$\overline{DOC}$
DOC LEVEL 5
AGC DET
1 AGC DF
EP 11
3dB
EP
SP
12dB
16 EP/SP AMP
3dB
PEAK DET
EP/$\overline{SP}$ 9
LEVEL COMP
12 EP/$\overline{SP}$ COMP
SP 13
PEAK DET
EQUALIZER AMP
EQ FIL IN 17
3 EQ
7 EQ FIL OUT

TL082CPS (TI) FLAT PACKAGE

OPERATIONAL AMPLIFIER

(J FET-INPUT)

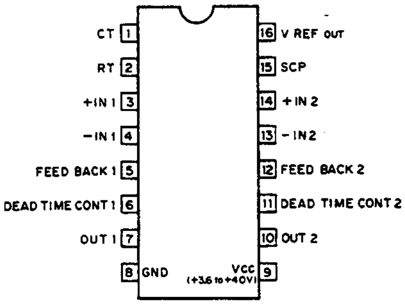
— TOP VIEW —

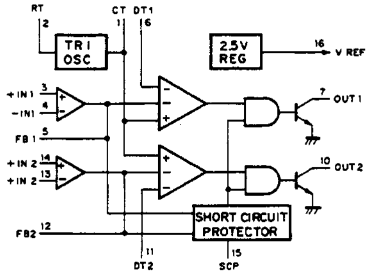

1
2
3
4
VEE (–15V)
Vcc (+15V)
8
7
6
5

TL1451ACNS (TI) FLAT PACKAGE

DUAL PWM POWER CONTROLLER

— TOP VIEW —

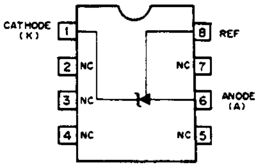

CT 1
RT 2
+IN 1 3
–IN 1 4
FEED BACK 1 5
DEAD TIME CONT 1 6
OUT 1 7
8 GND
16 V REF OUT
15 SCP
14 +IN 2
13 –IN 2
12 FEED BACK 2
11 DEAD TIME CONT 2
10 OUT 2
VCC (+3.6 to +40V) 9

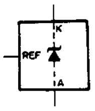

RT
2
CT
1
DT1
6
TRI OSC
2.5V REG
16
V REF
+IN 1
3
–IN1
4
FB 1
5
+IN 2
14
+IN 2
13
7
OUT 1
10
OUT 2
FB2
12
SHORT CIRCUIT PROTECTOR
11
DT2
15
SCP

TL431CPS (TI) FLAT PACKAGE

ADJUSTABLE PRECISION SHUNT REGULATOR

– TOP VIEW –

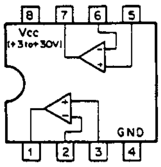

CATHODE (K)
1
2 NC
3 NC
4 NC
8 REF
NC 7
6 ANODE (A)
NC 5



uPC358G2 (NEC) FLAT PACKAGE

DUAL OPERATIONAL AMPLIFIERS

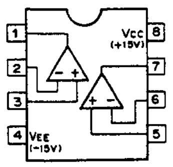
— TOP VIEW —


8
7
6
5
Vcc (+3to+30V)
GND
1
2
3
4

uPC4572G2 (NEC) FLAT PACKAGE

OPERATIONAL AMPLIFIER (WIDE BAND, LOW NOISE)

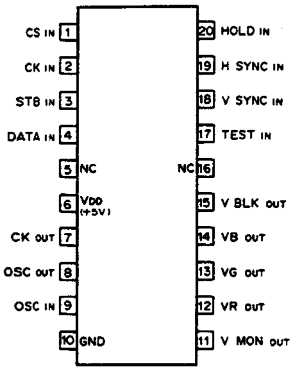
– TOP VIEW –

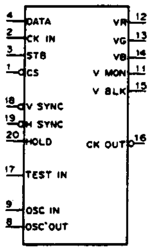

1
2
3
4
Vee
(-15V)
5
6
7
8
Vcc
(+15V)

uPD6145G (NEC) FLAT PACKAGE

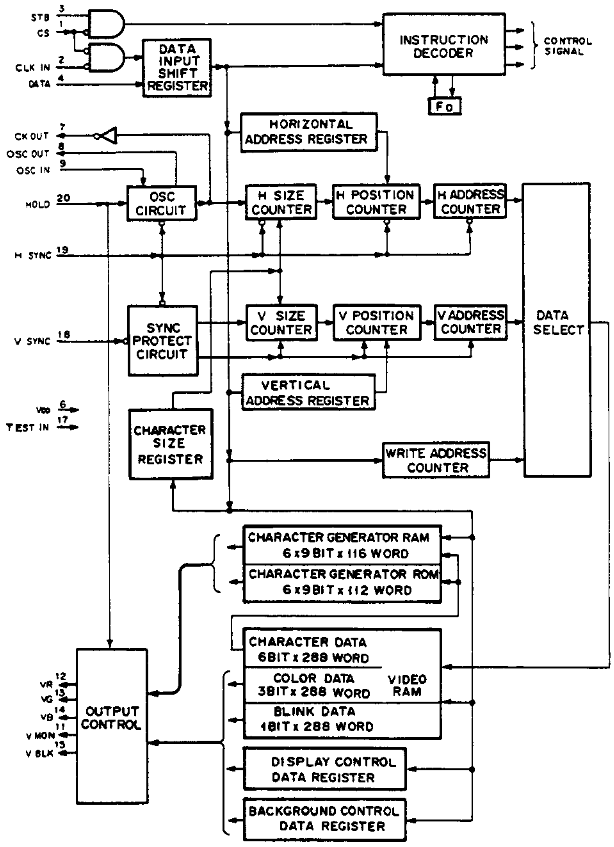
C-MOS CHARACTER DISPLAY

– TOP VIEW –


CS IN 1
CK IN 2
STB IN 3
DATA IN 4
5 NC
6 VDD (+5V)
CK OUT 7
OSC OUT 8
OSC IN 9
10 GND
20 HOLD IN
19 H SYNC IN
18 V SYNC IN
17 TEST IN
NC 16
15 V BLK OUT
14 VB OUT
13 VG OUT
12 VR OUT
11 V MON OUT


4 DATA
2 CK IN
3 STB
1 CS
18 V SYNC
19 H SYNC
20 HOLD
17 TEST IN
9 OSC IN
8 OSC OUT
VR 12
VG 13
VB 14
V MON 11
V BLK 15
CK OUT 16

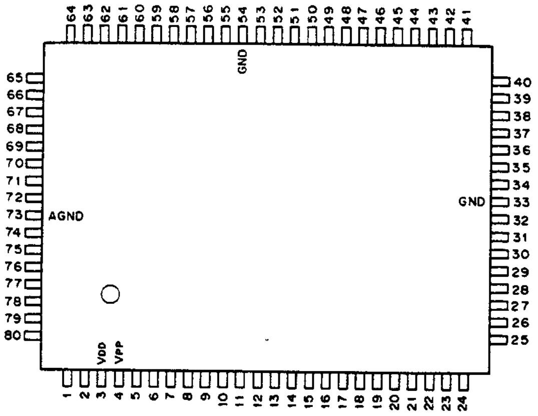
CK : CLOCK
CS : CHIP SELECT
DATA : SERIAL DATA
H SYNC : HORIZONTAL SYNC SIGNAL
STB : STROBE
TEST IN : TEST CLOCK INPUT
V BLK : V BLANKING SIGNAL
V MON : WORD SIGNAL MONITOR
V SYNC : VERTICAL SYNC SIGNAL
VR, VG, VB : WORD SIGNAL


STB 3
CS 1
CLK IN 2
DATA 4
DATA INPUT SHIFT REGISTER
INSTRUCTION DECODER
CONTROL SIGNAL
Fo
CK OUT 7
OSC OUT 8
OSC IN 9
HOLD 20
HORIZONTAL ADDRESS REGISTER
OSC CIRCUIT
H SIZE COUNTER
H POSITION COUNTER
H ADDRESS COUNTER
H SYNC 19
V SYNC 18
SYNC PROTECT CIRCUIT
V SIZE COUNTER
V POSITION COUNTER
V ADDRESS COUNTER
DATA SELECT
VERTICAL ADDRESS REGISTER
VDD 6
TEST IN 17
CHARACTER SIZE REGISTER
WRITE ADDRESS COUNTER
CHARACTER GENERATOR RAM 6x9BIT x 116 WORD
CHARACTER GENERATOR ROM 6x9BIT x 112 WORD
CHARACTER DATA 6BIT x 288 WORD
COLOR DATA 3BIT x 288 WORD
VIDEO RAM
BLINK DATA 1BIT x 288 WORD
VR 12
VG 13
VB 14
V MON 11
V BLK 15
OUTPUT CONTROL
DISPLAY CONTROL DATA REGISTER
BACKGROUND CONTROL DATA REGISTER

uPD75P516GF (NEC)

C-MOS 4-BIT MICROCOMPUTER

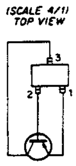
– TOP VIEW –


64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41
GND
65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
AGND
40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25
GND
VDD
VPP
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

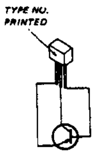
(V_{DD} = + 5V, V_{PP} = FOR PROGRAMMING)

PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I	AN0	21	I/O	P73/KR7	41	I/O	P30/MD0	61	I/O	P143
2	I	A V_{REF}	22	I/O	P72/KR6	42	I/O	P23/BUZ	62	I/O	P142
3	–	V_{DD}	23	I/O	P71/KR5	43	I/O	P22/PCL	63	I/O	P141
4	–	V_{PP}	24	I/O	P70/KR4	44	I/O	P21	64	I/O	P140
5	I/O	P113	25	I/O	P63/KR3	45	I/O	P20/PO0	65	I/O	P133
6	I/O	P112	26	I/O	P62/KR2	46	I	P13/TI0	66	I/O	P132
7	I/O	P111	27	I/O	P61/KR1	47	I	P12/INT2	67	I/O	P131
8	I/O	P110	28	I/O	P60/KR0	48	I	P11/INT1	68	I/O	P130
9	I/O	P103	29	I/O	P53	49	I	P10/INT0	69	I/O	P123
10	I/O	P102	30	I/O	P52	50	I/O	PO3/SI0/SB1	70	I/O	P122
11	I/O	P101	31	I/O	P51	51	I/O	PO2/SO0/SB0	71	I/O	P121
12	I/O	P100	32	I/O	P50	52	I/O	PO1/$\overline{\text{SCK0}}$	72	I/O	P120
13	I/O	P93	33	–	GND	53	I	PO0/INT4	73	–	AGND
14	I/O	P92	34	I/O	P43	54	–	GND	74	I	P153/AN7
15	I/O	P91	35	I/O	P42	55	I	XT1	75	I	P152/AN6
16	I/O	P90	36	I/O	P41	56	–	XT2	76	I	P151/AN5
17	I	P83/SI1	37	I/O	P40	57	–	IC(GND)	77	I	P150/AN4
18	I/O	P82/SO1	38	I/O	P33/MD3	58	I	X1	78	I	AN3
19	I/O	P81/$\overline{\text{SCK1}}$	39	I/O	P32/MD2	59	I	X2	79	I	AN2
20	I/O	P80/PP0	40	I/O	P31/MD1	60	I	$\overline{\text{RESET}}$	80	I	AN1

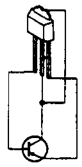
TRANSISTOR, DIODE


(SCALE 4/1)
TOP VIEW
3
2
1

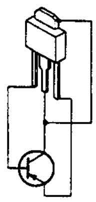
2SA1122
2SA1226
2SA1576
2SA1611
2SA812
2SB624


TYPE NO.
PRINTED

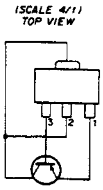
2SA1175



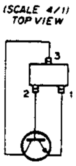
2SA1242



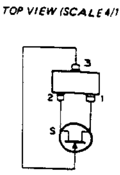
2SB1040A


(SCALE 4/1)
TOP VIEW
3
2
1

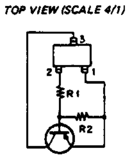
2SB1121
2SB1123


(SCALE 4/1)
TOP VIEW
3
2
1

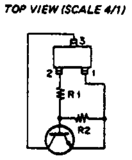
2SC1623
2SC2223
2SC2712
2SC2712Y
2SC2715
2SC3326N
2SC3356
2SC4081
2SC4175
2SC4177


TOP VIEW (SCALE 4/1)
3
2
1
S

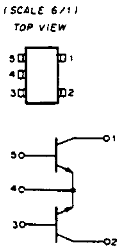
2SK94


TOP VIEW (SCALE 4/1)
3
2
1
R1
R2

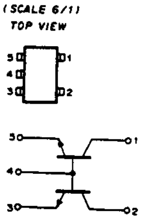
DTA114EK (R1 = 10K, R2 = 10K)
DTA124EU (R1 = 22K, R2 = 22K)
DTA143EU (R1 = 4.7K, R2 = 4.7K)
DTA144EK (R1 = 47K, R2 = 47K)
DTA144EU (R1 = 47K, R2 = 47K)


TOP VIEW (SCALE 4/1)
3
2
1
R1
R2

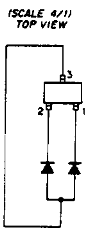
DTC114EU (R1 = 10K, R2 = 10K)
DTC114YK (R1 = 10K, R2 = 47K)
DTC124EU (R1 = 22K, R2 = 22K)
DTC124XK (R1 = 22K, R2 = 47K)
DTC144EK (R1 = 47K, R2 = 47K)
DTC144EU (R1 = 47K, R2 = 47K)


(SCALE 6/1)
TOP VIEW
5
4
3
1
2

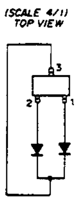
FMW1


(SCALE 6/1)
TOP VIEW
5
4
3
1
2

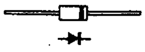
FMW2


(SCALE 4/1)
TOP VIEW
3
2
1

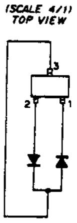
1S2835
1SS303


(SCALE 4/1)
TOP VIEW
3
2
1

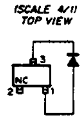
1S2837
1SS304



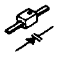
1SS119


(SCALE 4/1)
TOP VIEW
3
2
1

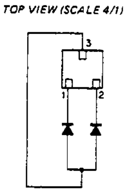
1SS123


(SCALE 4/1)
TOP VIEW
3
NC
2
1

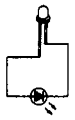
1SS196



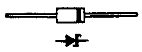
1T32-8


TOP VIEW (SCALE 4/1)
3
1
2

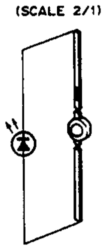
DAP202
DAP202U



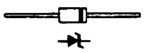
EBR3402S ; RED
TLUR164 ; RED



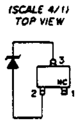
ERA81-004
ERB81-004



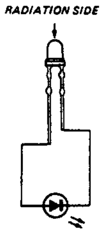
GL-1HD1 : RED



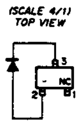
RD ? ?ESL ?


(SCALE 4/1)
TOP VIEW
3
NC
2
1

RD ? ?M-B


RADIATION SIDE

SLH-34YT3 : YELLOW


(SCALE 4/1)
TOP VIEW
3
NC
2
1

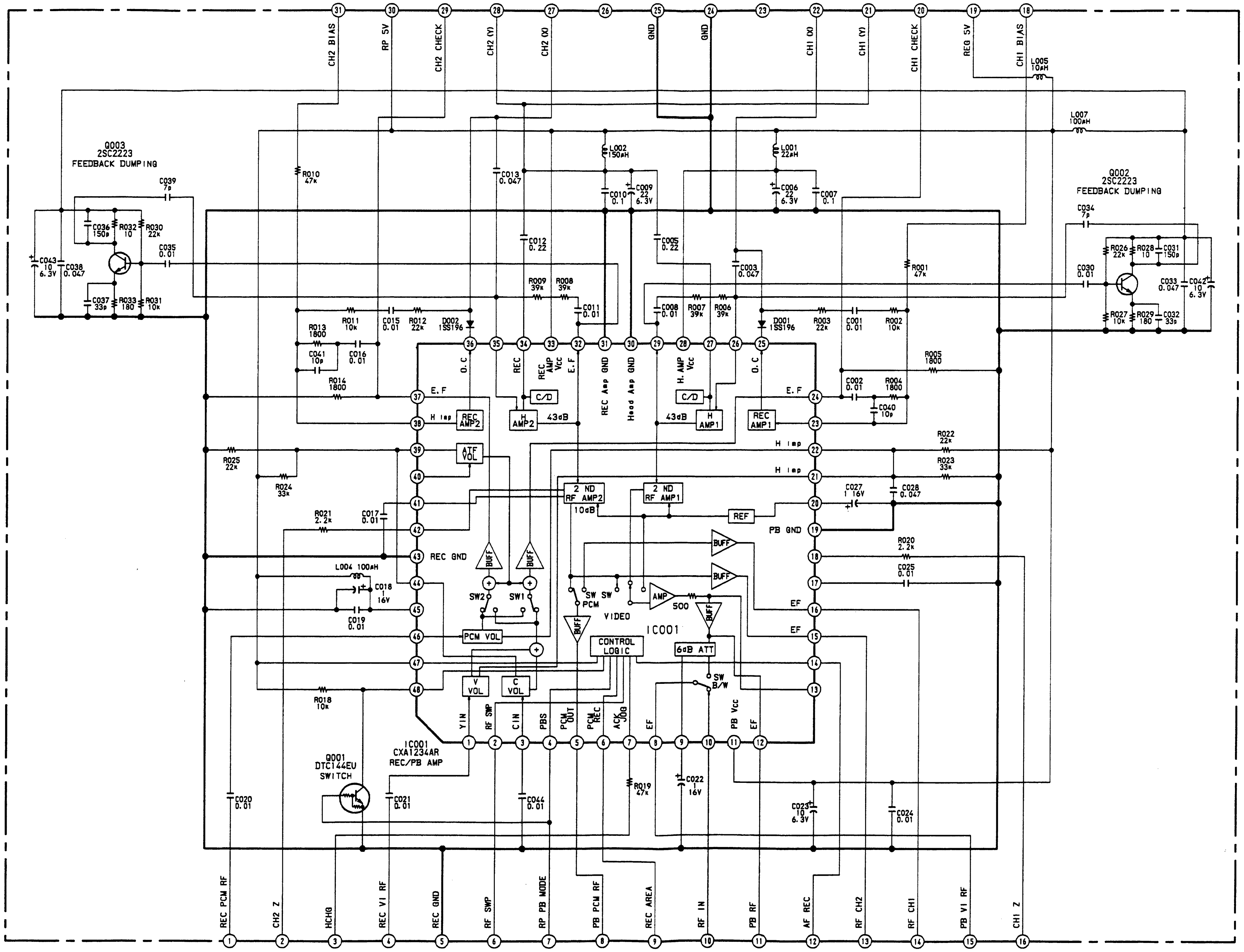
SB05-05CP

SECTION 13
PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

CIRCUIT FUNCTION OF THE PRINTED CIRCUIT BOARDS

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	RP-56P	HEAD AMP, REC Y/C/AFM/ ATF MIX
	HR-3P	REC/PB HEAD AMP
	VO-32P	Y PROCESS
	VO-33P	CHROMA PROCESS
	HD-8P	COMB FILTER
	CC-43	CAMERA CONNECTOR
	VA-102P	Y/C MIX
AUDIO	VA-96	XLR INPUT AMP
	FP-37	AUDIO INPUT/OUTPUT AMP
	AU-136P	PCM AUDIO PROCESS, AFM SIGNAL PROCESS
	HP-49	EARPHONE JACK
TIME CODE	FP-37	TIME CODE PROCESS
SYSCON SERVO	AU-136P	ATF SERVO
	SS-43P	SERVO SYSTEM, MECHANISM CONTROL
	SY-153P	SYSTEM CONTROL
	KY-191	FUNCTION KEY BOARD
	FP-89	MODE SW, TAPE END SENSOR
	FP-90	TAPE SELECT SW, TAPE TOP SENSOR
	CP-147	BACK TALLY
POWER	PS-209	DC-DC CONVERTER
Others	CP-146	CONNECTOR PANEL
	CC-44	TERMINAL

HR-3P ; REC/PB HEAD AMPLIFIER


CH2 BIAS
RP 5V
CH2 CHECK
CH2 (Y)
CH2 (X)
GND
GND
CH1 (X)
CH1 (Y)
CH1 CHECK
REC 5V
CH1 BIAS
L005 10μH
L007 100μH
L002 150μH
L001 22μH
Q003 2SC2223 FEEDBACK DUMPING
Q002 2SC2223 FEEDBACK DUMPING
C039 7p
C036 150p
R032 10
R030 22k
C035 0.01
C043 10 6.3V
C038 0.047
C037 33p
R033 180
R031 10k
R010 47k
C013 0.047
C012 0.22
C010 0.1
C009 22 6.3V
C005 0.22
C006 22 6.3V
C007 0.1
C003 0.047
R001 47k
C034 7p
R026 22k
R028 10
C031 150p
C030 0.01
C033 0.047
C042 10 6.3V
R027 10k
R029 180
C032 33p
R009 39k
R008 39k
C011 0.01
C008 0.01
R007 39k
R006 39k
R013 1800
R011 10k
C015 0.01
R012 22k
D002 1SS196
D001 1SS196
R003 22k
C001 0.01
R002 10k
C041 10p
C016 0.01
R014 1800
R005 1800
C002 0.01
R004 1800
C040 10p
O.C
REC
REC AMP Vcc
E.F
REC Amp GND
Head Amp GND
H. AMP Vcc
O.C
E.F
E.F
C/D
C/D
H AMP2
43dB
H AMP1
43dB
H imp
REC AMP2
REC AMP1
ATF VOL
R022 22k
R023 33k
H imp
H imp
R025 22k
R024 33k
2 ND RF AMP2
10dB
2 ND RF AMP1
REF
C027 1 16V
C028 0.047
PB GND
R021 2.2k
C017 0.01
REC GND
BUFF
BUFF
BUFF
BUFF
R020 2.2k
C025 0.01
L004 100μH
C018 1 16V
C019 0.01
SW2
SW1
SW PCM
SW VIDEO
AMP
500
BUFF
BUFF
IC001
EF
EF
PCM VOL
CONTROL LOGIC
6dB ATT
SW B/W
V VOL
C VOL
R018 10k
YIN
RF SWP
CIN
PBS
PCM OUT
PCM REC
ACK JOG
EF
PB Vcc
EF
IC001 CXA1234AR REC/PB AMP
Q001 DTC144EU SWITCH
C020 0.01
C021 0.01
C044 0.01
R019 47k
C022 1 16V
C023 10 6.3V
C024 0.01
REC PCM RF
CH2 Z
HCHG
REC VI RF
REC GND
RF SWP
RP PB MODE
PB PCM RF
REC AREA
RF IN
PB RF
AF REC
RF CH2
RF CH1
PB VI RF
CH1 Z

HR-3/P

EVV-9000
EVV-9000P

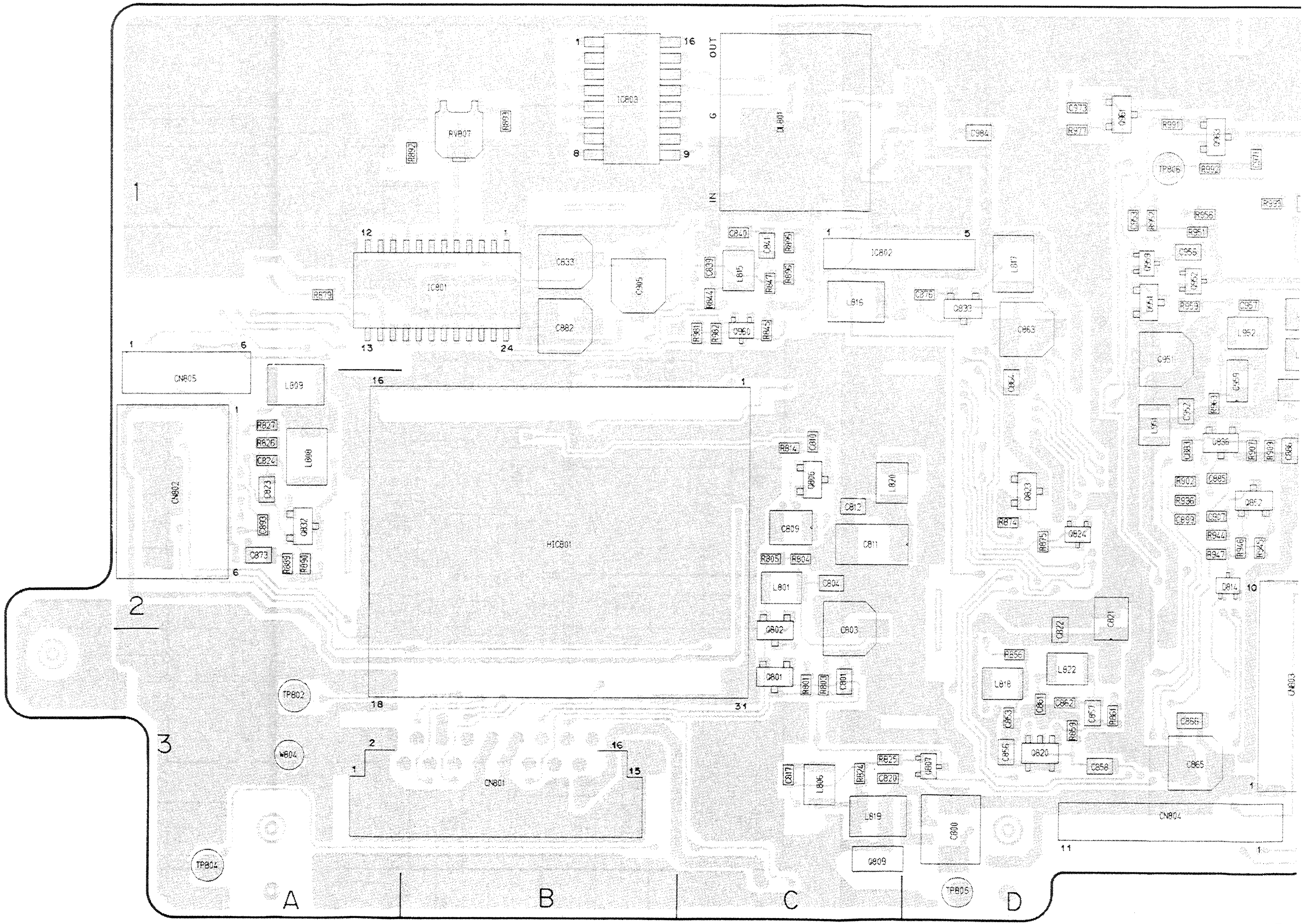
RP-56P; HEAD AMPLIFIER
REC Y/C/AFM/ATF MIX
FLYING ERASE

RP-56P(1-635-111-11) A SIDE

CN801	B-3
CN802	A-2
CN803	D-3
CN804	D-3
CN805	A-1
D814	D-2
D951	D-1
DL801	C-1
IC801	B-1
IC802	C-1
IC803	B-1
Q801	C-3
Q802	C-3
Q806	C-2
Q807	D-3
Q809	C-3
Q820	D-3
Q823	D-2
Q824	D-2
Q832	A-2
Q833	D-1
Q836	D-2
Q952	D-1
Q959	D-1
Q960	C-1
Q961	D-1
Q963	D-1
RV807	B-1
TP802	A-3
TP804	A-3
TP805	D-3
TP806	D-1

RP-56P(1-635-111-11) B SIDE

D801	B-1
D802	B-1
D804	D-1
D805	D-1
D806	D-3
D807	A-2
D808	D-2
D810	D-2
D811	D-1
D812	D-1
D813	D-1
IC804	C-1
Q803	C-3
Q804	C-2
Q805	C-2
Q808	D-3
Q810	C-3
Q811	A-2
Q812	B-1
Q813	B-1
Q814	B-1
Q815	D-1
Q817	C-1
Q819	D-1
Q821	D-3
Q822	D-3
Q825	D-3
Q826	D-3
Q827	D-3
Q828	B-1
Q829	A-2
Q830	A-2
Q831	A-2
Q837	D-2
Q838	A-1
Q839	A-1
Q840	B-1
Q841	B-1
Q842	D-1
Q843	D-1
Q844	D-1
Q848	D-1
Q849	B-1
Q850	C-1
Q851	D-1
Q951	D-1
Q953	D-1
Q954	D-2
Q955	D-1
Q956	D-2
Q957	D-1
Q958	D-1
Q962	C-1
Q964	D-1
Q965	D-1
Q966	D-1
Q967	D-1
RV801	C-2
RV802	B-2
RV803	B-2
RV805	D-2
RV806	D-2
TP807	B-1



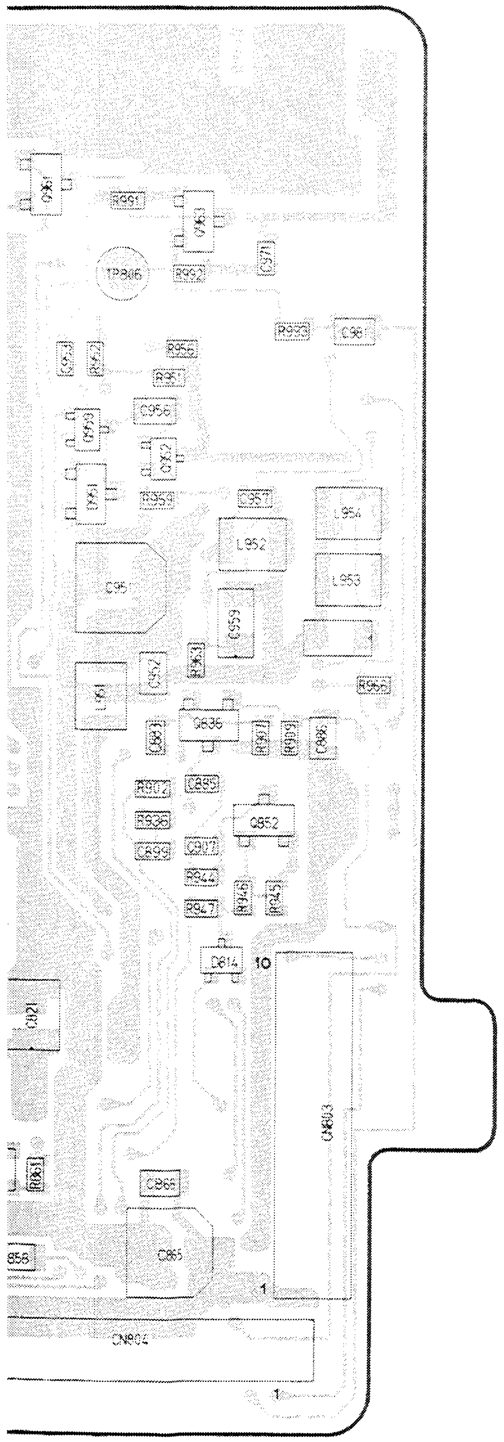
1
2
3
A
B
C
D
IC801
IC802
IC803
HIC801
DL801
CN801
CN802
CN803
CN804
CN805
RV807
TP802
TP804
TP805
TP806
IN
OUT

RP-

1-635-

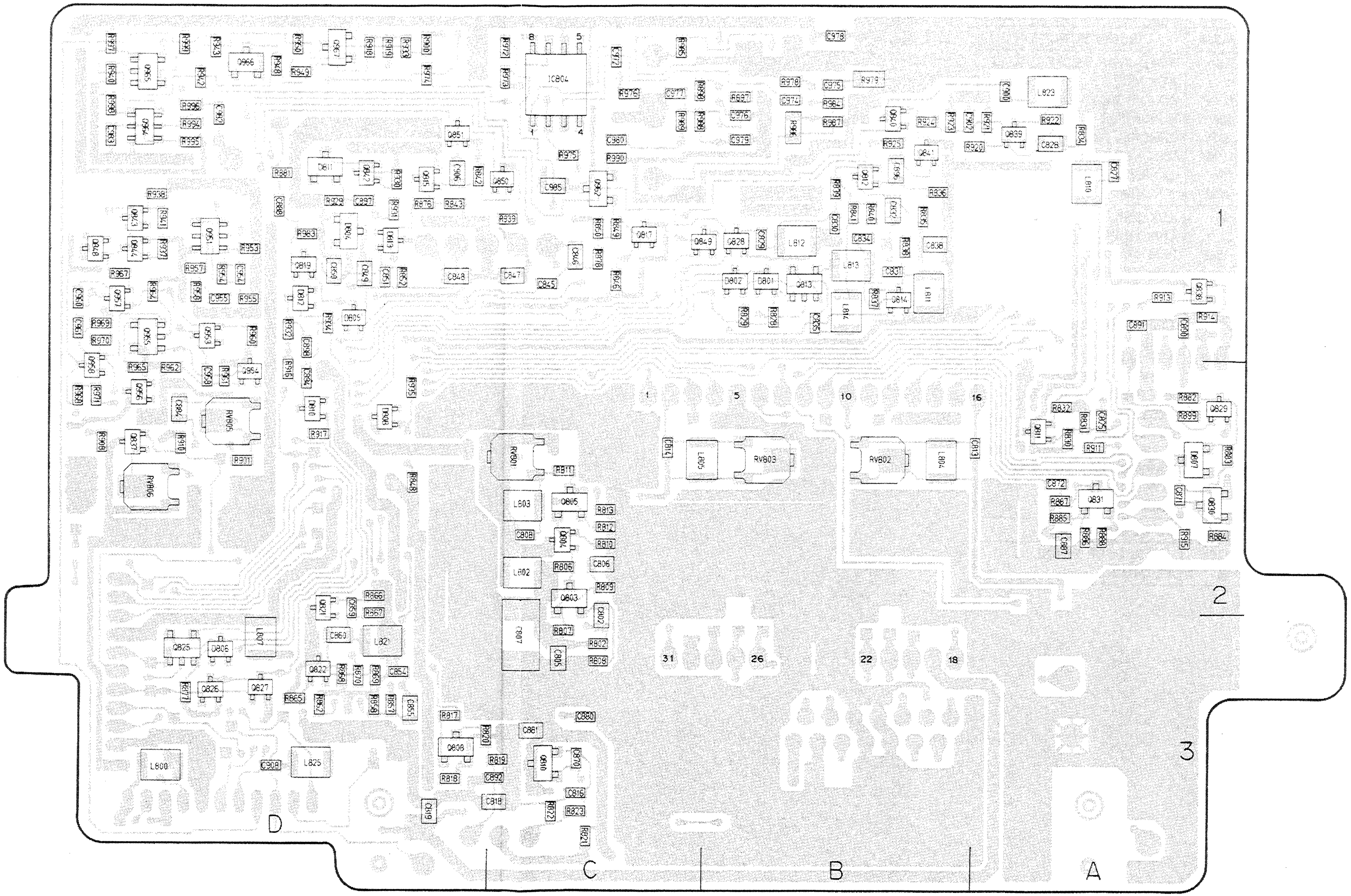
EVV-900

A Side is the same as COMP


TP806
CN802
CN803
10
1

RP-56P A SIDE
1-635-111-11(1)
EVV-9000P

A Side is the same as COMPONENT Side

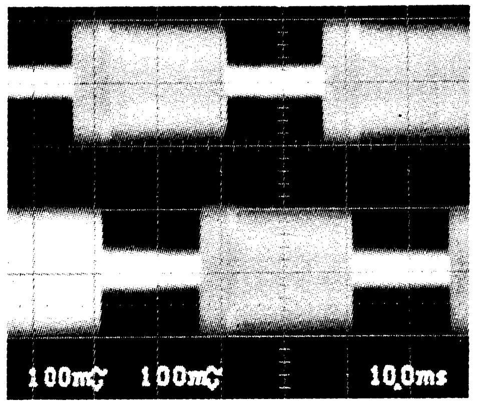

IC804
RV801
RV802
RV803
RV805
RV806
1
2
3
A
B
C
D

RP-56P B SIDE
1-635-111-11(1)
EVV-9000P

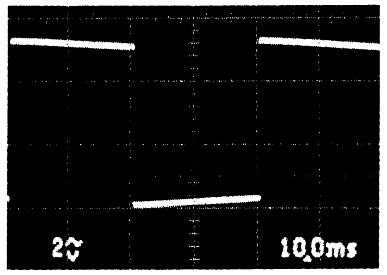
B Side is the same as SOLDER Side

RP-56P ; HEAD AMPLIFIER
REC Y/C/AFM/ATF MIX
FLYING ERASE

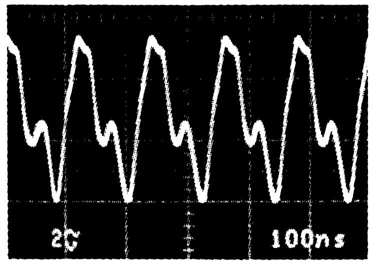
① CH-1 : CN802-3pin PB mode
CH-2 : CN802-4pin



② CN802-2pin PB mode

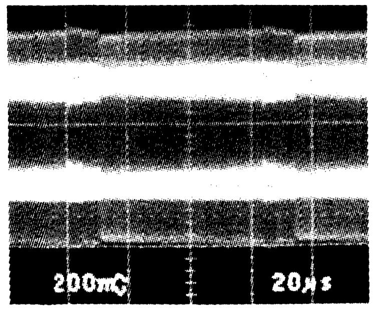


③ TP804 REC mode



8.30MHz

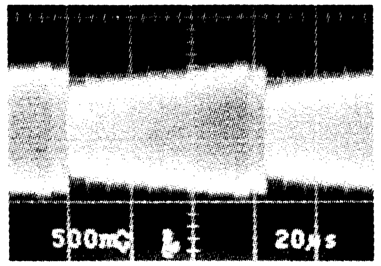
④ TP805 EE mode

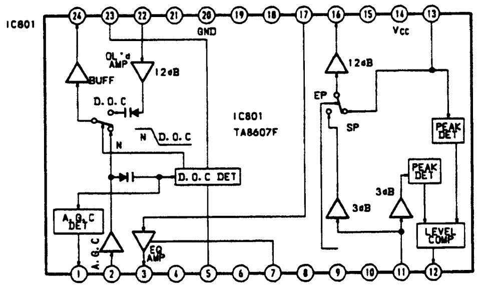


Measurement Condition

- Input Signal : DXC-325P Test Color Bars
- Cassette Tape : EE mode…E5-60HME
  PB mode…Alignment Tape WR5-8CSE

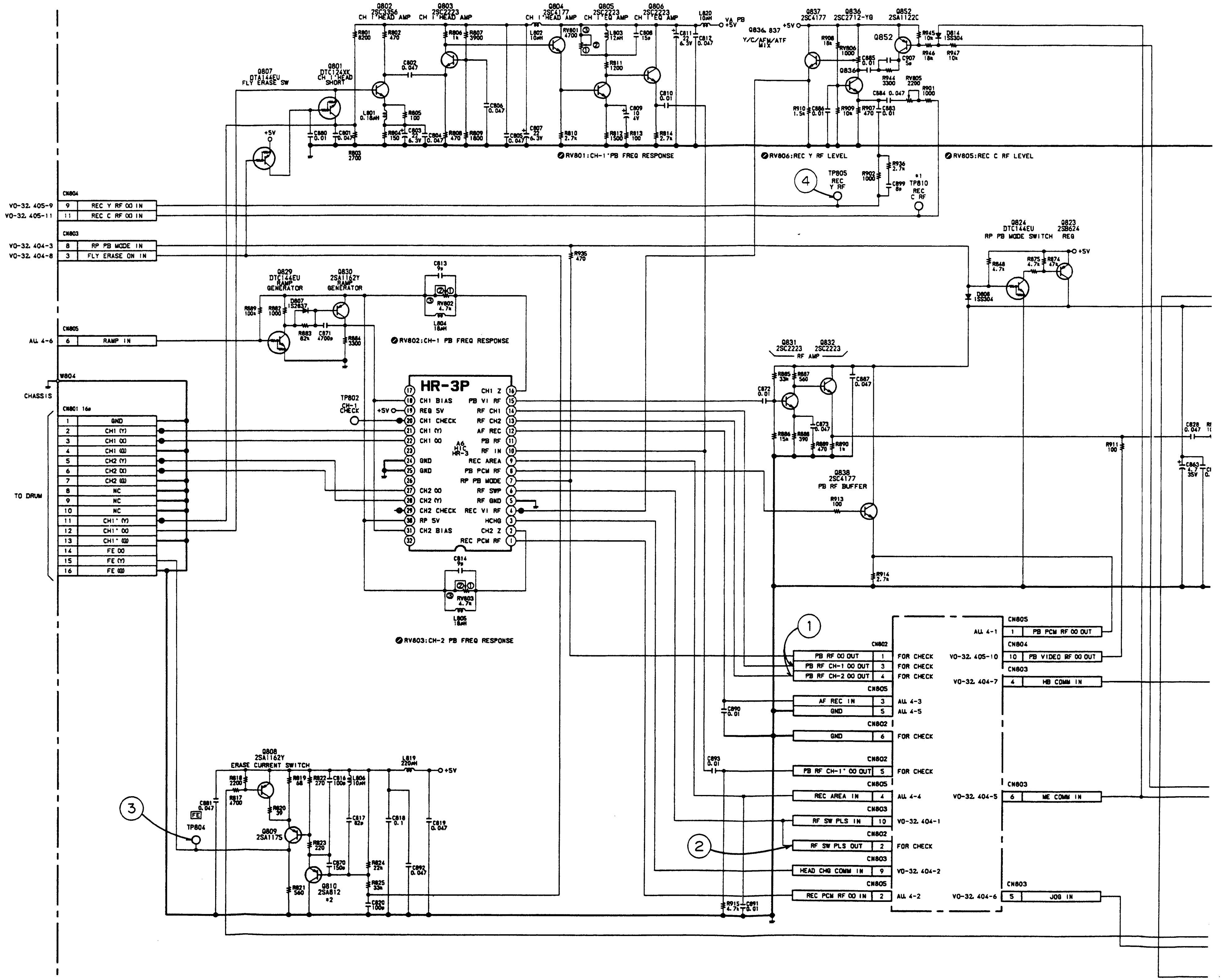
⑤ TP806 PB mode

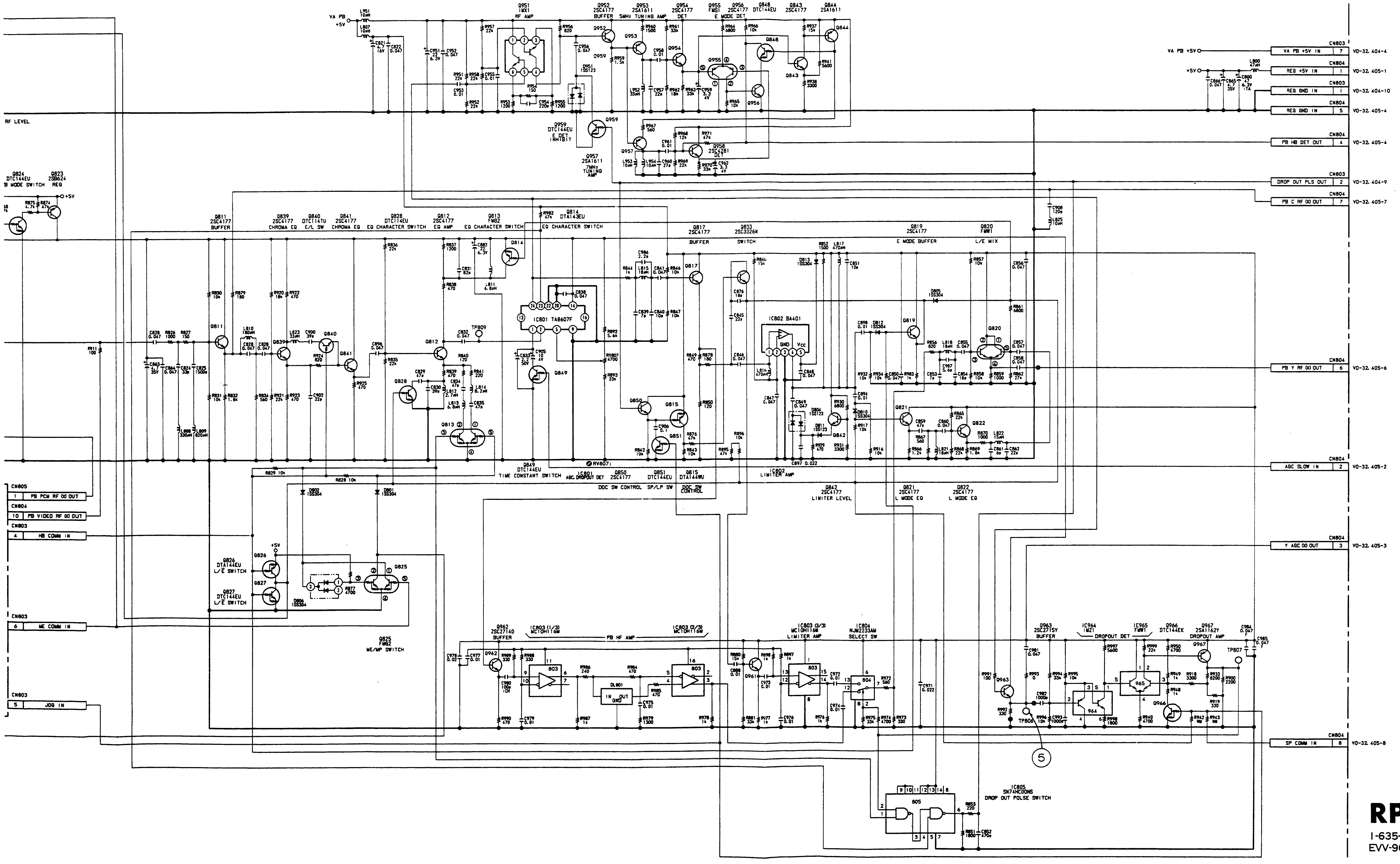



IC801
GND
Vcc
DL'd AMP
BUFF
12dB
D.O.C
N
D.O.C
D.O.C DET
A.G.C DET
A.G.C
EQ AMP
IC801
TA8607F
12dB
EP
SP
PEAK DET
PEAK DET
3dB
3dB
LEVEL COMP

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO
*1	TP810 ADDED	EK:10101-
*2	Q810 CHANGED 2SA1162Y → 2SA812	


Q802 2SC3356 CH 1 HEAD AMP
Q803 2SC2223 CH 1 HEAD AMP
Q804 2SC4177 CH 1 HEAD AMP
Q805 2SC2223 CH 1 EQ AMP
Q806 2SC2223 CH 1 EQ AMP
L820 10μH
VA PB +5V
Q836, 837 Y/C/AFM/ATF MIX
Q837 2SC4177
Q836 2SC2712-YG
Q852 2SA1122C
D814 1SS304
Q807 DTA144EU FLY ERASE SW
Q801 DTC124XK CH 1 HEAD SHORT
+5V
RV801:CH-1 PB FREQ RESPONSE
RV806:REC Y RF LEVEL
RV805:REC C RF LEVEL
TP805 REC Y RF
TP810 REC C RF
CN804
VO-32, 405-9
VO-32, 405-11
REC Y RF OO IN
REC C RF OO IN
CN803
VO-32, 404-3
VO-32, 404-8
RP PB MODE IN
FLY ERASE ON IN
Q824 DTC144EU
Q823 2SB624
RP PB MODE SWITCH REG
D808 1SS304
Q829 DTC144EU RAMP GENERATOR
Q830 2SA1162Y RAMP GENERATOR
RV802:CH-1 PB FREQ RESPONSE
CN805
AU 4-6
RAMP IN
Q831 2SC2223
Q832 2SC2223
RF AMP
W804
CHASSIS
CN801 16P
GND
CH1 (Y)
CH1 OO
CH1 (X)
CH2 (Y)
CH2 OO
CH2 (X)
NC
NC
NC
CH1' (Y)
CH1' OO
CH1' (X)
FE OO
FE (Y)
FE (X)
TO DRUM
TP802 CH-1 CHECK
HR-3P
CH1 BIAS
REG 5V
CH1 CHECK
CH1 (Y)
CH1 OO
GND
GND
CH2 OO
CH2 (Y)
CH2 CHECK
RP 5V
CH2 BIAS
A6 HIC HR-3
CH1 Z
PB VI RF
RF CH1
RF CH2
AF REC
PB RF
RF IN
REC AREA
PB PCM RF
RP PB MODE
RF SWP
RF GND
REC VI RF
HCHG
CH2 Z
REC PCM RF
Q838 2SC4177 PB RF BUFFER
RV803:CH-2 PB FREQ RESPONSE
Q808 2SA1162Y ERASE CURRENT SWITCH
L819 220μH
+5V
TP804
Q809 2SA1175
Q810 2SA812 *2
①
②
③
④
CN802
PB RF OO OUT
PB RF CH-1 OO OUT
PB RF CH-2 OO OUT
FOR CHECK
CN805
AF REC IN
GND
AU 4-3
AU 4-5
GND
PB RF CH-1' OO OUT
REC AREA IN
AU 4-4
CN803
RF SW PLS IN
VO-32, 404-1
RF SW PLS OUT
HEAD CHG COMM IN
VO-32, 404-2
REC PCM RF OO IN
AU 4-2
AU 4-1
PB PCM RF OO OUT
CN804
VO-32, 405-10
PB VIDEO RF OO OUT
VO-32, 404-7
HB COMM IN
VO-32, 404-5
ME COMM IN
VO-32, 404-6
JOG IN

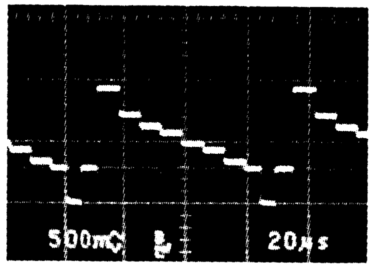

VA PB +5V
+5V
L951 10uH
L807 10uH
Q951 IMX1 RF AMP
Q952 2SC4177 BUFFER
Q953 2SA1611 5MHz TUNING AMP
Q954 2SC4177 DET
Q955 FMS1
Q956 2SC4177 E MODE DET
Q848 DTC144EU
Q843 2SC4177
Q844 2SA1611
D951 1SS123
Q959 DTC144EU E DET INHIBIT
Q957 2SA1611 7MHz TUNING AMP
Q958 2SC4281 DET
RF LEVEL
Q824 DTC144EU B MODE SWITCH
Q823 2SB624 REG
Q811 2SC4177 BUFFER
Q839 2SC4177 CHROMA EQ
Q840 DTC114TU E/L SW
Q841 2SC4177 CHROMA EQ
Q828 DTC114EU EQ CHARACTER SWITCH
Q812 2SC4177 EQ AMP
Q813 FMG2 EQ CHARACTER SWITCH
Q814 DTA143EU EQ CHARACTER SWITCH
IC801 TA8607F
TP809
Q849 DTC144EU TIME CONSTANT SWITCH
IC801 AGC DROPOUT DET
RV807
Q850 2SC4177
Q851 DTC144EU SP/LP SW
Q815 DTA144WU DOC SW CONTROL
DOC SW CONTROL
Q817 2SC4177 BUFFER
Q833 2SC3326N SWITCH
IC802 BA401
IC802 LIMITER AMP
Q842 2SC4177 LIMITER LEVEL
Q819 2SC4177 E MODE BUFFER
Q820 FMW1 L/E MIX
Q821 2SC4177 L MODE EQ
Q822 2SC4177 L MODE EQ
D813 1SS304
D812 1SS304
D805 1SS304
D804 1SS123
D811 1SS123
D810 1SS304
D802 1SS304
D801 1SS304
D806 1SS304
Q826 DTA144EU L/E SWITCH
Q827 DTC144EU L/E SWITCH
Q825 FMG2 ME/MP SWITCH
CN805 1 PB PCM RF OO OUT
CN804 10 PB VIDEO RF OO OUT
CN803 4 HB COMM IN
CN803 6 ME COMM IN
CN803 5 JOG IN
Q962 2SC2714O BUFFER
IC803 (1/3) MC10H116M
PB HF AMP
IC803 (2/3) MC10H116M
DL801
IC803 (3/3) MC10H116M LIMITER AMP
IC804 NJM2233AM SELECT SW
Q963 2SC2715Y BUFFER
IC964 IMZ1 DROPOUT DET
IC965 FMW1
Q966 DTC144EK
Q967 2SA1162Y DROPOUT AMP
TP806
TP807
5
IC805 SN74HC00NS DROP OUT POLSE SWITCH
CN803 VA PB +5V IN 7 VO-32 404-4
CN804 REG +5V IN 1 VO-32 405-1
CN803 REG GND IN 1 VO-32 404-10
CN804 REG GND IN 5 VO-32 405-4
CN804 PB HB DET OUT 4 VO-32 405-4
CN803 DROP OUT PLS OUT 2 VO-32 404-9
CN804 PB C RF OO OUT 7 VO-32 405-7
CN804 PB Y RF OO OUT 6 VO-32 405-6
CN804 AGC SLOW IN 2 VO-32 405-2
CN804 Y AGC OO OUT 3 VO-32 405-3
CN804 SP COMM IN 8 VO-32 405-8
13-3
13-3
H
I
J
K
L
M
N
O
P
1
2
3
4
5

RP-56P

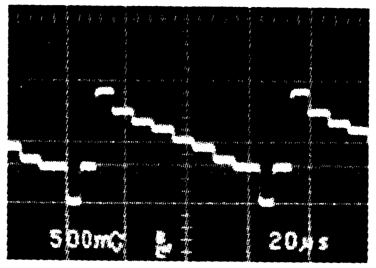
1-635-111-11(1)
EVV-9000P

VO-32P(1/2); Y PROCESS

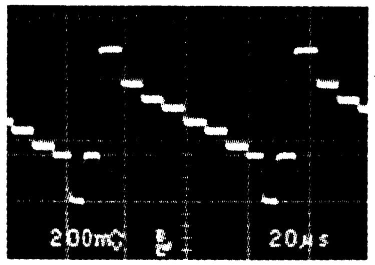
① TP402 EE mode



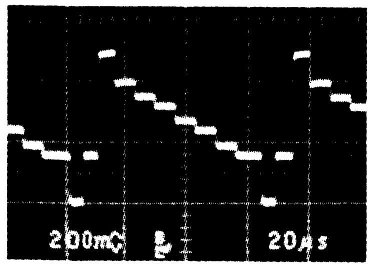
PB mode



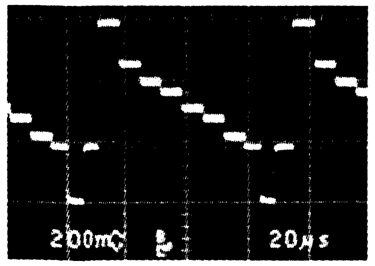
② TP401 EE mode



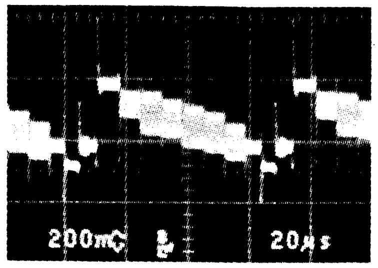
③ CN408-13pin PB mode



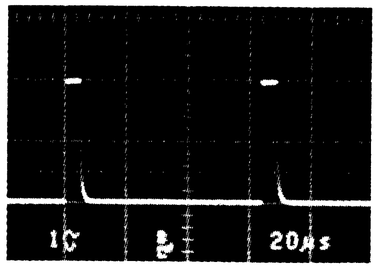
④ CN408-9pin EE mode



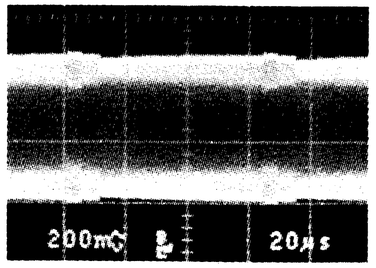
⑤ IC409-17pin EE mode



⑥ CN408-15pin EE mode

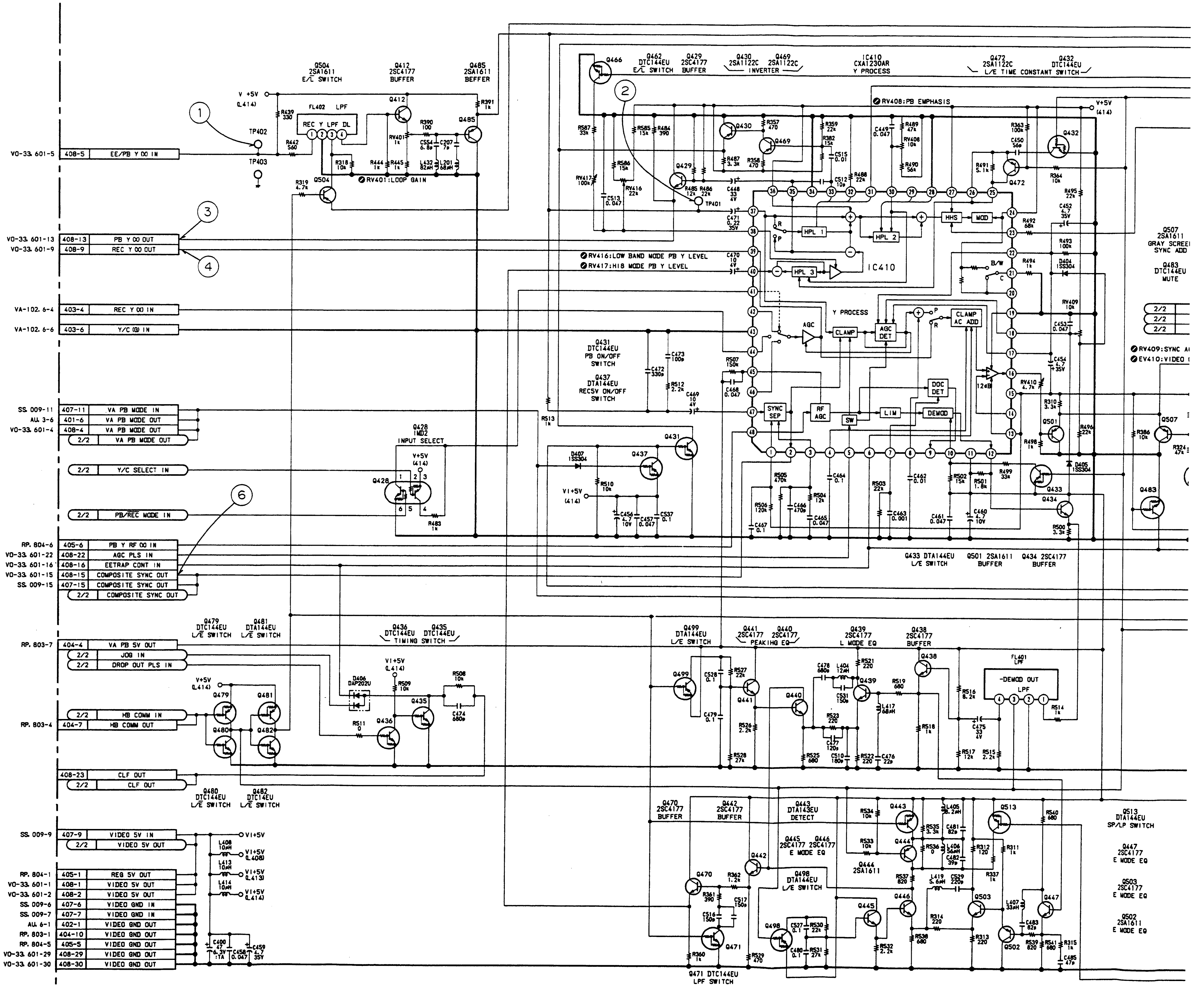


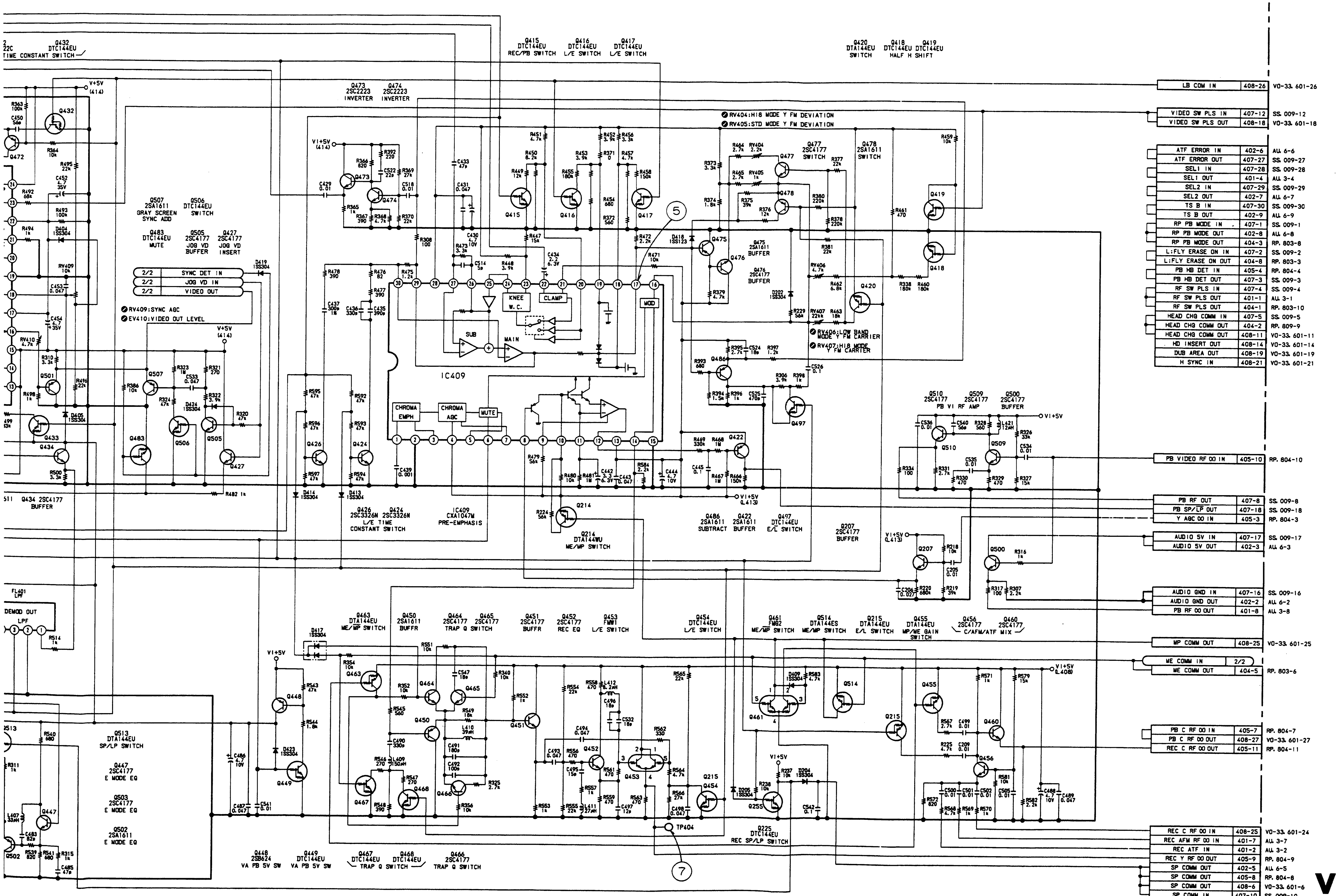
⑦ TP404 EE mode



Measurement Condition

- Input Signal : DXC-325P Test Color Bars
- Cassette Tape : EE mode···E5-60HME
  PB mode···Alignment Tape
  WR5-8CSE


VO-33, 601-5
408-5 EE/PB Y OO IN
VO-33, 601-13
VO-33, 601-9
408-13 PB Y OO OUT
408-9 REC Y OO OUT
VA-102, 6-4
VA-102, 6-6
403-4 REC Y OO IN
403-6 Y/C Ⓢ IN
SS, 009-11
AU, 3-6
VO-33, 601-4
407-11 VA PB MODE IN
401-6 VA PB MODE OUT
408-4 VA PB MODE OUT
2/2 VA PB MODE OUT
2/2 Y/C SELECT IN
2/2 PB/REC MODE IN
RP, 804-6
VO-33, 601-22
VO-33, 601-16
VO-33, 601-15
SS, 009-15
405-6 PB Y RF OO IN
408-22 AGC PLS IN
408-16 EETRAP CONT IN
408-15 COMPOSITE SYNC OUT
407-15 COMPOSITE SYNC OUT
2/2 COMPOSITE SYNC OUT
RP, 803-7
404-4 VA PB 5V OUT
2/2 JOG IN
2/2 DROP OUT PLS IN
RP, 803-4
2/2 HB COMM IN
404-7 HB COMM OUT
408-23 CLF OUT
2/2 CLF OUT
SS, 009-9
407-9 VIDEO 5V IN
2/2 VIDEO 5V OUT
RP, 804-1
VO-33, 601-1
VO-33, 601-2
SS, 009-6
SS, 009-7
AU, 6-1
RP, 803-1
RP, 804-5
VO-33, 601-29
VO-33, 601-30
405-1 REG 5V OUT
408-1 VIDEO 5V OUT
408-2 VIDEO 5V OUT
407-6 VIDEO GND IN
407-7 VIDEO GND IN
402-1 VIDEO GND OUT
404-10 VIDEO GND OUT
405-5 VIDEO GND OUT
408-29 VIDEO GND OUT
408-30 VIDEO GND OUT
TP402
TP403
TP401
Q504 2SA1611 E/L SWITCH
Q412 2SC4177 BUFFER
Q485 2SA1611 BEFFER
FL402 LPF
REC Y LPF DL
RV401:LOOP GAIN
Q466
Q462 DTC144EU E/L SWITCH
Q429 2SC4177 BUFFER
Q430 2SA1122C
Q469 2SA1122C
INVERTER
IC410 CXA1230AR Y PROCESS
Q472 2SA1122C
Q432 DTC144EU
L/E TIME CONSTANT SWITCH
RV408:PB EMPHASIS
V+5V (414)
RV416:LOW BAND MODE PB Y LEVEL
RV417:HI8 MODE PB Y LEVEL
HPL 1
HPL 2
HPL 3
IC410
HHS
MOD
B/W
Y PROCESS
AGC
CLAMP
AGC DET
CLAMP AC ADD
SYNC SEP
RF AGC
SW
LIM
DEMOD
DOC DET
Q507 2SA1611 GRAY SCREEN SYNC ADD
Q483 DTC144EU MUTE
RV409:SYNC
EV410:VIDEO
Q431 DTC144EU PB ON/OFF SWITCH
Q437 DTA144EU RECSV ON/OFF SWITCH
Q428 IMD2 INPUT SELECT
Q433 DTA144EU L/E SWITCH
Q501 2SA1611 BUFFER
Q434 2SC4177 BUFFER
Q479 DTC144EU L/E SWITCH
Q481 DTA144EU L/E SWITCH
Q436 DTC144EU
Q435 DTC144EU
TIMING SWITCH
D406 DAP202U
Q480 DTC144EU L/E SWITCH
Q482 DTC144EU L/E SWITCH
Q499 DTA144EU L/E SWITCH
Q441 2SC4177
Q440 2SC4177
PEAKING EQ
Q439 2SC4177 L MODE EQ
Q438 2SC4177 BUFFER
FL401 LPF
-DEMOD OUT LPF
Q470 2SC4177 BUFFER
Q442 2SC4177 BUFFER
Q443 DTA143EU DETECT
Q445 2SC4177
Q446 2SC4177
E MODE EQ
Q498 DTA144EU L/E SWITCH
Q444 2SA1611
Q471 DTC144EU LPF SWITCH
Q513 DTA144EU SP/LP SWITCH
Q447 2SC4177 E MODE EQ
Q503 2SC4177 E MODE EQ
Q502 2SA1611 E MODE EQ
A
B
C
D
E
F
G
H


Q432 DTC144EU TIME CONSTANT SWITCH
Q415 DTC144EU REC/PB SWITCH
Q416 DTC144EU L/E SWITCH
Q417 DTC144EU L/E SWITCH
Q420 DTA144EU SWITCH
Q418 DTC144EU
Q419 DTC144EU
HALF H SHIFT
Q473 2SC2223 INVERTER
Q474 2SC2223 INVERTER
RV404:H18 MODE Y FM DEVIATION
RV405:STD MODE Y FM DEVIATION
Q477 2SC4177 SWITCH
Q478 2SA1611 SWITCH
Q475 2SA1611 BUFFER
Q476 2SC4177 BUFFER
Q507 2SA1611 GRAY SCREEN SYNC ADD
Q506 DTC144EU SWITCH
Q483 DTC144EU MUTE
Q505 2SC4177 JOG VD BUFFER
Q427 2SC4177 JOG VD INSERT
2/2 SYNC DET IN
2/2 JOG VD IN
2/2 VIDEO OUT
RV409:SYNC AGC
RV410:VIDEO OUT LEVEL
SUB
MAIN
KNEE W.C.
CLAMP
MOD
IC409
CHROMA EMPH
CHROMA AGC
MUTE
RV406:LOW BAND MODE Y FM CARRIER
RV407:H18 MODE Y FM CARRIER
Q510 2SC4177 PB VI RF AMP
Q509 2SC4177
Q500 2SC4177 BUFFER
Q434 2SC4177 BUFFER
Q426 2SC3326N
Q424 2SC3326N
L/E TIME CONSTANT SWITCH
IC409 CXA1047M PRE-EMPHASIS
Q214 DTA144WU ME/MP SWITCH
Q486 2SA1611 SUBTRACT
Q422 2SA1611 BUFFER
Q497 DTC144EU E/L SWITCH
Q207 2SC4177 BUFFER
FL401 LPF
DEMOD OUT LPF
Q463 DTA144EU ME/MP SWITCH
Q450 2SA1611 BUFFR
Q464 2SC4177
Q465 2SC4177
TRAP Q SWITCH
Q451 2SC4177 BUFFR
Q452 2SC4177 REC EQ
Q453 FMW1 L/E SWITCH
Q454 DTC144EU L/E SWITCH
Q461 FMB2 ME/MP SWITCH
Q514 DTA144ES ME/MP SWITCH
Q215 DTA144EU E/L SWITCH
Q455 DTA144EU MP/ME GAIN SWITCH
Q456 2SC4177
Q460 2SC4177
C/AFM/ATF MIX
Q513 DTA144EU SP/LP SWITCH
Q447 2SC4177 E MODE EQ
Q503 2SC4177 E MODE EQ
Q502 2SA1611 E MODE EQ
Q448 2SB624 VA PB 5V SW
Q449 DTC144EU VA PB 5V SW
Q467 DTC144EU
Q468 DTC144EU
TRAP Q SWITCH
Q466 2SC4177 TRAP Q SWITCH
Q225 DTC144EU REC SP/LP SWITCH
TP404
V+5V (414)
VI+5V (414)
VI+5V (413)
VI+5V (408)
LB COM IN 408-26 VO-33, 601-26
VIDEO SW PLS IN 407-12 SS, 009-12
VIDEO SW PLS OUT 408-18 VO-33, 601-18
ATF ERROR IN 402-6 AU, 6-6
ATF ERROR OUT 407-27 SS, 009-27
SEL1 IN 407-28 SS, 009-28
SEL1 OUT 401-4 AU, 3-4
SEL2 IN 407-29 SS, 009-29
SEL2 OUT 402-7 AU, 6-7
TS B IN 407-30 SS, 009-30
TS B OUT 402-9 AU, 6-9
RP PB MODE IN 407-1 SS, 009-1
RP PB MODE OUT 402-8 AU, 6-8
RP PB MODE OUT 404-3 RP, 803-8
L:FLY ERASE ON IN 407-2 SS, 009-2
L:FLY ERASE ON OUT 404-8 RP, 803-3
PB HB DET IN 405-4 RP, 804-4
PB HB DET OUT 407-3 SS, 009-3
RF SW PLS IN 407-4 SS, 009-4
RF SW PLS OUT 401-1 AU, 3-1
RF SW PLS OUT 404-1 RP, 803-10
HEAD CHG COMM IN 407-5 SS, 009-5
HEAD CHG COMM OUT 404-2 RP, 809-9
HEAD CHG COMM OUT 408-11 VO-33, 601-11
HD INSERT OUT 408-14 VO-33, 601-14
DUB AREA OUT 408-19 VO-33, 601-19
H SYNC IN 408-21 VO-33, 601-21
PB VIDEO RF OO IN 405-10 RP, 804-10
PB RF OUT 407-8 SS, 009-8
PB SP/LP OUT 407-18 SS, 009-18
Y AGC OO IN 405-3 RP, 804-3
AUDIO 5V IN 407-17 SS, 009-17
AUDIO 5V OUT 402-3 AU, 6-3
AUDIO GND IN 407-16 SS, 009-16
AUDIO GND OUT 402-2 AU, 6-2
PB RF OO OUT 401-8 AU, 3-8
MP COMM OUT 408-25 VO-33, 601-25
ME COMM IN 2/2
ME COMM OUT 404-5 RP, 803-6
PB C RF OO IN 405-7 RP, 804-7
PB C RF OO OUT 408-27 VO-33, 601-27
REC C RF OO OUT 405-11 RP, 804-11
REC C RF OO IN 408-25 VO-33, 601-24
REC AFM RF OO IN 401-7 AU, 3-7
REC ATF IN 401-2 AU, 3-2
REC Y RF OO OUT 405-9 RP, 804-9
SP COMM OUT 402-5 AU, 6-5
SP COMM OUT 405-8 RP, 804-8
SP COMM OUT 408-6 VO-33, 601-6
SP COMM IN 407-10 SS, 009-10
5
7

VO-32P(1/2)

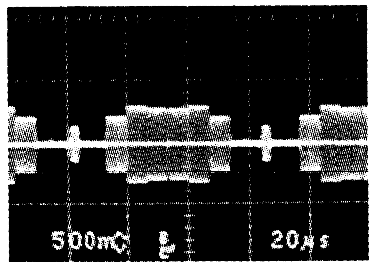
1-635-109-11(1)
EVV-9000P

13-4 13-4

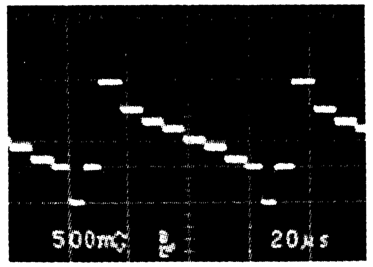
| I | J | K | L | M | N | O | P

VO-32P(2/2); DATA SCREEN

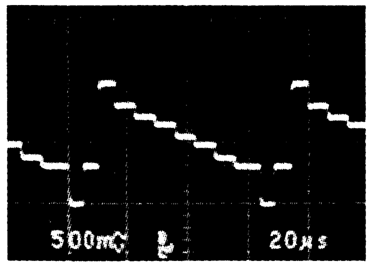
① CN408-20pin EE mode



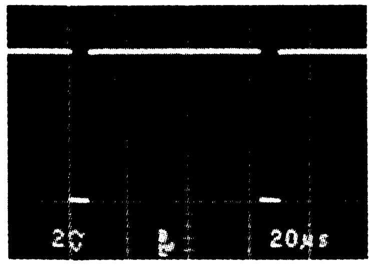
②TP407 EE mode



PB mode

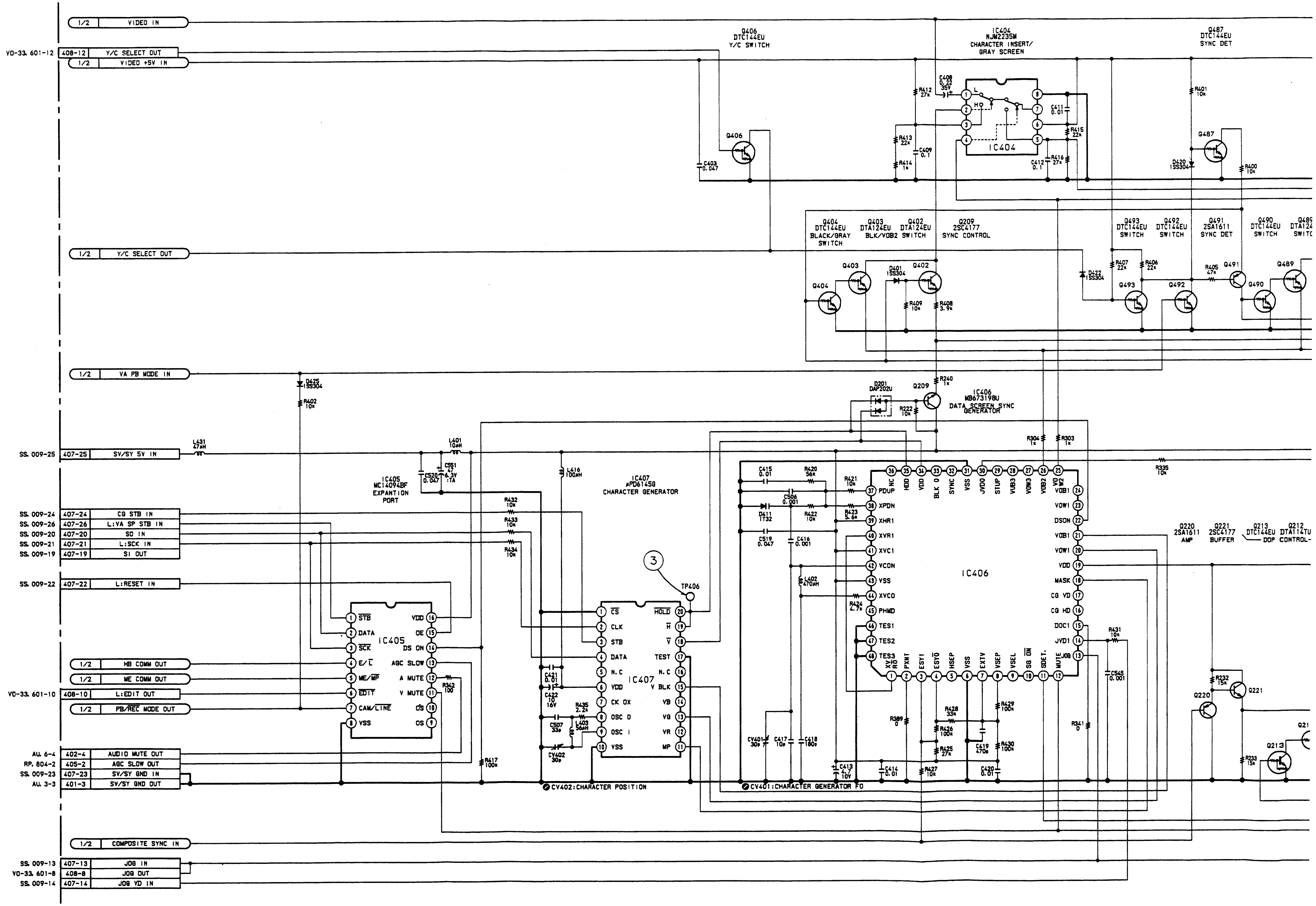


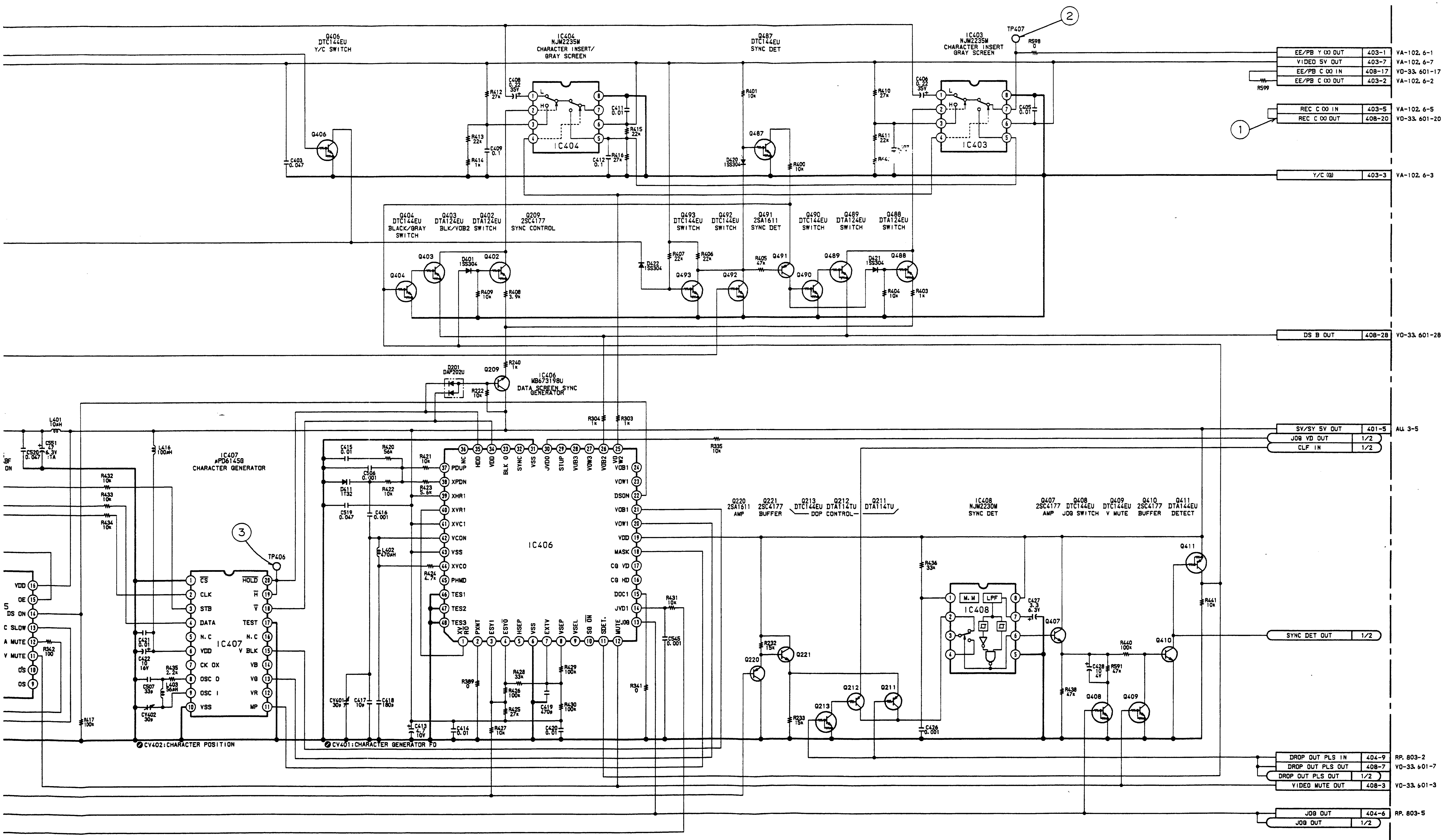
③ TP406 EE mode



Measurement Condition

- Input Signal : DXC-325P Test Color Bars
- Cassette Tape : EE mode···E5-60HME
  PB mode···Alignment Tape WR5-8CSE


1/2 VIDEO IN
VO-33, 601-12 408-12 Y/C SELECT OUT
1/2 VIDEO +5V IN
1/2 Y/C SELECT OUT
1/2 VA PB MODE IN
SS, 009-25 407-25 SV/SY 5V IN
SS, 009-24 407-24 CG STB IN
SS, 009-26 407-26 L:VA SP STB IN
SS, 009-20 407-20 SO IN
SS, 009-21 407-21 L:SCK IN
SS, 009-19 407-19 SI OUT
SS, 009-22 407-22 L:RESET IN
1/2 HB COMM OUT
1/2 ME COMM OUT
VO-33, 601-10 408-10 L:EDIT OUT
1/2 PB/REC MODE OUT
AU, 6-4 402-4 AUDIO MUTE OUT
RP, 804-2 405-2 AGC SLOW OUT
SS, 009-23 407-23 SV/SY GND IN
AU, 3-3 401-3 SV/SY GND OUT
1/2 COMPOSITE SYNC IN
SS, 009-13 407-13 JOG IN
VO-33, 601-8 408-8 JOG OUT
SS, 009-14 407-14 JOG VD IN
Q406 DTC144EU Y/C SWITCH
IC404 NJM2235M CHARACTER INSERT/ GRAY SCREEN
Q487 DTC144EU SYNC DET
Q404 DTC144EU BLACK/GRAY SWITCH
Q403 DTA124EU BLK/VOB2
Q402 DTA124EU SWITCH
Q209 2SC4177 SYNC CONTROL
Q493 DTC144EU SWITCH
Q492 DTC144EU SWITCH
Q491 2SA1611 SYNC DET
Q490 DTC144EU SWITCH
IC406 MB673198U DATA SCREEN SYNC GENERATOR
D201 DAP202U
IC405 MC14094BF EXPANTION PORT
IC407 μPD6145G CHARACTER GENERATOR
TP406
③
Q220 2SA1611 AMP
Q221 2SC4177 BUFFER
Q213 DTC144EU
Q212 DTA114TU
DOP CONTROL
CV402:CHARACTER POSITION
CV401:CHARACTER GENERATOR FO
STB DATA SCK E/L ME/MP EDIT CAM/LINE VSS VDD OE DS ON AGC SLOW A MUTE V MUTE DS OS
CS CLK STB DATA N.C VDD CK OX OSC O OSC I VSS HOLD H V TEST N.C V BLK VB VG VR MP
PDUP XPDN XHR1 XVR1 XVC1 VCON VSS XVCO PHMD TES1 TES2 TES3
VOB1 VOW1 DSON VOB1 VOW1 VDD MASK CG VD CG HD DOC1 JVD1 JOG
L431 47μH
L401 10μH
L416 100μH
L402 470μH
L403 56μH


Q406 DTC144EU Y/C SWITCH
IC404 NJM2235M CHARACTER INSERT/ GRAY SCREEN
Q487 DTC144EU SYNC DET
IC403 NJM2235M CHARACTER INSERT GRAY SCREEN
TP407
R598 0
②
①
③
EE/PB Y (X) OUT | 403-1 | VA-102, 6-1
VIDEO 5V OUT | 403-7 | VA-102, 6-7
EE/PB C (X) IN | 408-17 | VO-33, 601-17
EE/PB C (X) OUT | 403-2 | VA-102, 6-2
R599
REC C (X) IN | 403-5 | VA-102, 6-5
REC C (X) OUT | 408-20 | VO-33, 601-20
Y/C (Q) | 403-3 | VA-102, 6-3
Q404 DTC144EU BLACK/GRAY SWITCH
Q403 DTA124EU BLK/VDB2 SWITCH
Q402 DTA124EU
Q209 2SC4177 SYNC CONTROL
Q493 DTC144EU SWITCH
Q492 DTC144EU SWITCH
Q491 2SA1611 SYNC DET
Q490 DTC144EU SWITCH
Q489 DTA124EU SWITCH
Q488 DTA124EU SWITCH
D401 1SS304
D420 1SS304
D421 1SS304
D422 1SS304
DS B OUT | 408-28 | VO-33, 601-28
D201 DAP202U
IC406 MB673198U DATA SCREEN SYNC GENERATOR
SV/SY 5V OUT | 401-5 | AU 3-5
JOG VD OUT | 1/2
CLF IN | 1/2
IC407 μPD6145G CHARACTER GENERATOR
TP406
CS CLK STB DATA N.C VDD CK OX OSC O OSC I VSS
HOLD H V TEST N.C V BLK VB VG VR MP
IC406
PDUP XPDN XHR1 XVR1 XVC1 VCON VSS XVCO PHMD TES1 TES2 TES3
VOB1 VOW1 DSON VOB1 VOW1 VDD MASK CG VD CG HD DOC1 JVD1 JOB
Q220 2SA1611 AMP
Q221 2SC4177 BUFFER
Q213 DTC144EU DOP CONTROL
Q212 DTA114TU
Q211 DTA114TU
IC408 NJM2230M SYNC DET
M.M LPF
Q407 2SC4177 AMP
Q408 DTC144EU JOG SWITCH
Q409 DTC144EU V MUTE
Q410 2SC4177 BUFFER
Q411 DTA144EU DETECT
SYNC DET OUT | 1/2
DROP OUT PLS IN | 404-9 | RP, 803-2
DROP OUT PLS OUT | 408-7 | VO-33, 601-7
DROP OUT PLS OUT | 1/2
VIDEO MUTE OUT | 408-3 | VO-33, 601-3
JOG OUT | 404-6 | RP, 803-5
JOG OUT | 1/2
CV402: CHARACTER POSITION
CV401: CHARACTER GENERATOR FO
VDD OE DS ON C SLOW A MUTE V MUTE DS OS

VO-32P(2/2)

1-635-109-11(1)
EVV-9000P

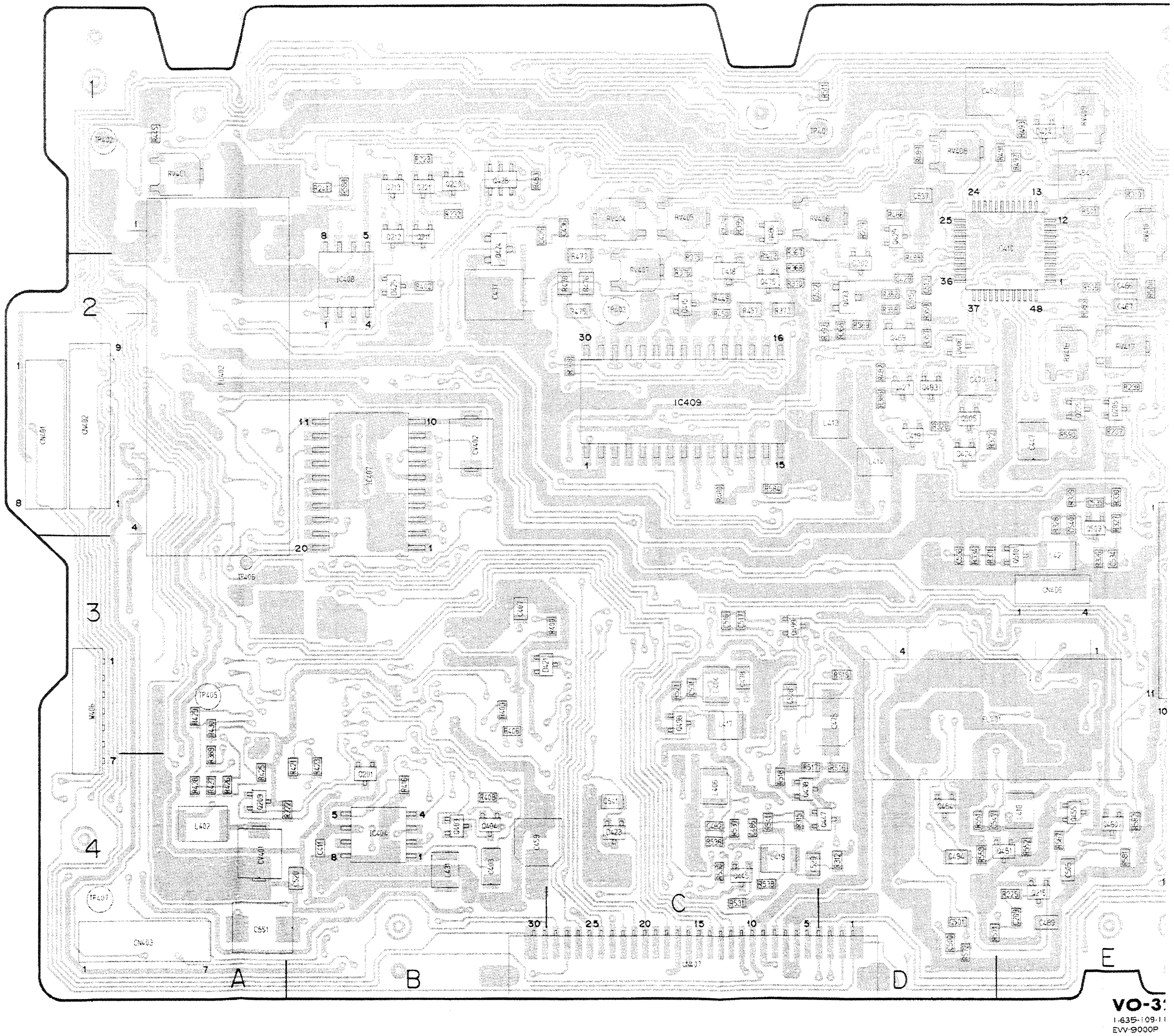
VO-32P ; Y PROCESS
DATA SCREEN

VO-32P(1-635-109-11) A SIDE

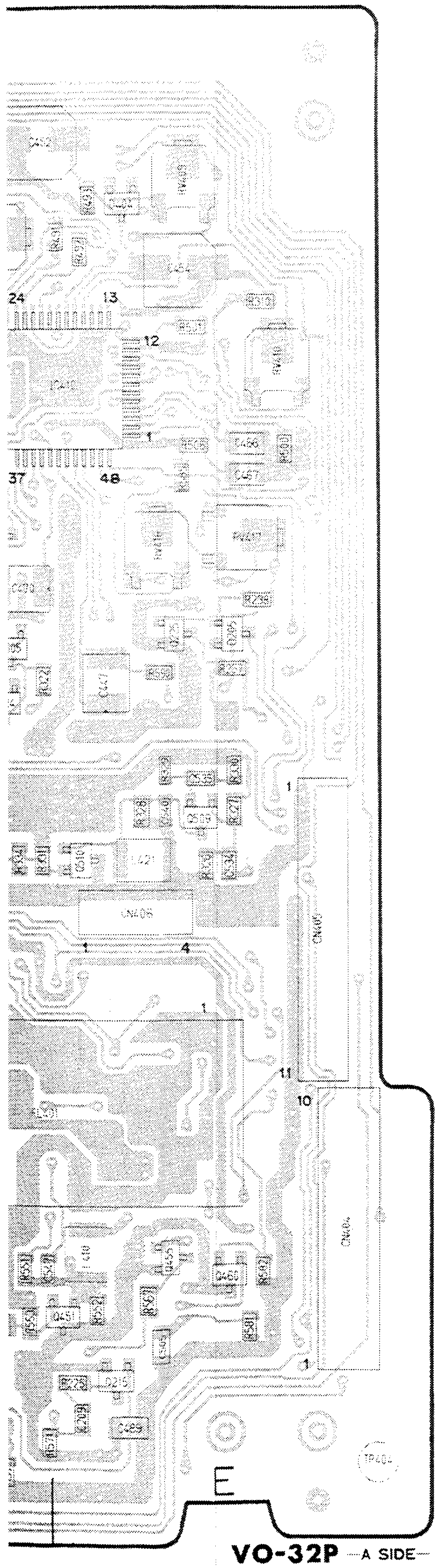
CN401	A-2
CN402	A-2
CN403	A-4
CN404	E-4
CN405	E-3
CN407	C-4
CV401	A-4
CV402	B-2
D201	B-4
D202	D-2
D205	E-2
D404	E-1
D406	D-2
D418	C-2
D419	D-2
D421	B-3
D423	C-4
D424	D-2
D425	B-2
FL401	D-3
FL402	A-2
IC404	B-4
IC407	B-2
IC408	B-2
IC409	C-2
IC410	E-1
Q209	A-4
Q211	B-1
Q212	B-2
Q213	B-1
Q215	E-4
Q220	B-1
Q221	B-1
Q225	E-2
Q403	B-4
Q404	B-4
Q415	C-2
Q424	B-2
Q427	D-2
Q428	B-1
Q429	D-1
Q438	C-4
Q445	C-4
Q447	C-4
Q451	D-4
Q454	D-4
Q455	E-4
Q460	E-4
Q469	D-2
Q473	D-2
Q475	C-2
Q483	D-2
Q486	C-1
Q498	C-3
Q499	C-3
Q505	D-2
Q509	E-2
Q510	E-3
RV401	A-1
RV404	C-1
RV405	C-1
RV406	C-1
RV407	C-2
RV408	D-1
RV409	E-1
RV410	E-1
RV416	E-2
RV417	E-2

VO-32P(1-635-109-11) B SIDE

CN408	B-1
D204	C-4
D401	B-4
D405	E-1
D407	D-2
D409	E-4
D411	A-4
D413	B-2
D414	C-1
D417	E-3
D420	C-3
D422	B-4
IC403	B-3
IC405	B-2
IC406	A-3
Q207	C-2
Q214	C-3
Q402	B-4
Q406	B-1
Q407	A-2
Q408	A-1
Q409	A-1
Q410	A-1
Q411	A-3
Q412	A-2
Q416	C-2
Q417	C-2
Q418	C-1
Q419	C-1
Q420	C-2
Q422	C-2
Q426	B-2
Q430	D-2
Q431	D-2
Q432	D-1
Q433	E-1
Q434	E-1
Q435	D-1
Q436	D-1
Q437	D-2
Q439	C-3
Q440	C-4
Q441	D-3
Q442	C-4
Q443	C-4
Q444	C-4
Q446	C-4
Q448	C-4
Q449	C-4
Q450	D-4
Q452	D-4
Q453	D-4
Q456	D-4
Q461	E-4
Q462	E-2
Q463	E-3
Q464	D-3
Q465	D-4
Q466	D-4
Q467	D-3
Q468	D-3
Q470	C-3
Q471	C-3
Q472	D-1
Q474	C-2
Q476	C-2
Q477	C-1
Q478	C-2
Q479	C-3
Q480	C-3
Q481	C-2
Q482	C-2
Q485	A-1
Q487	B-3
Q488	C-3
Q489	B-3
Q490	C-3
Q491	C-3
Q492	C-3
Q493	B-4
Q497	C-1
Q500	C-4
Q501	E-1
Q502	C-4
Q503	D-4
Q504	B-2
Q506	D-2
Q507	D-2
Q513	C-4
TP401	D-1
TP402	A-1
TP403	C-2
TP404	E-4
TP405	A-3
TP407	A-4

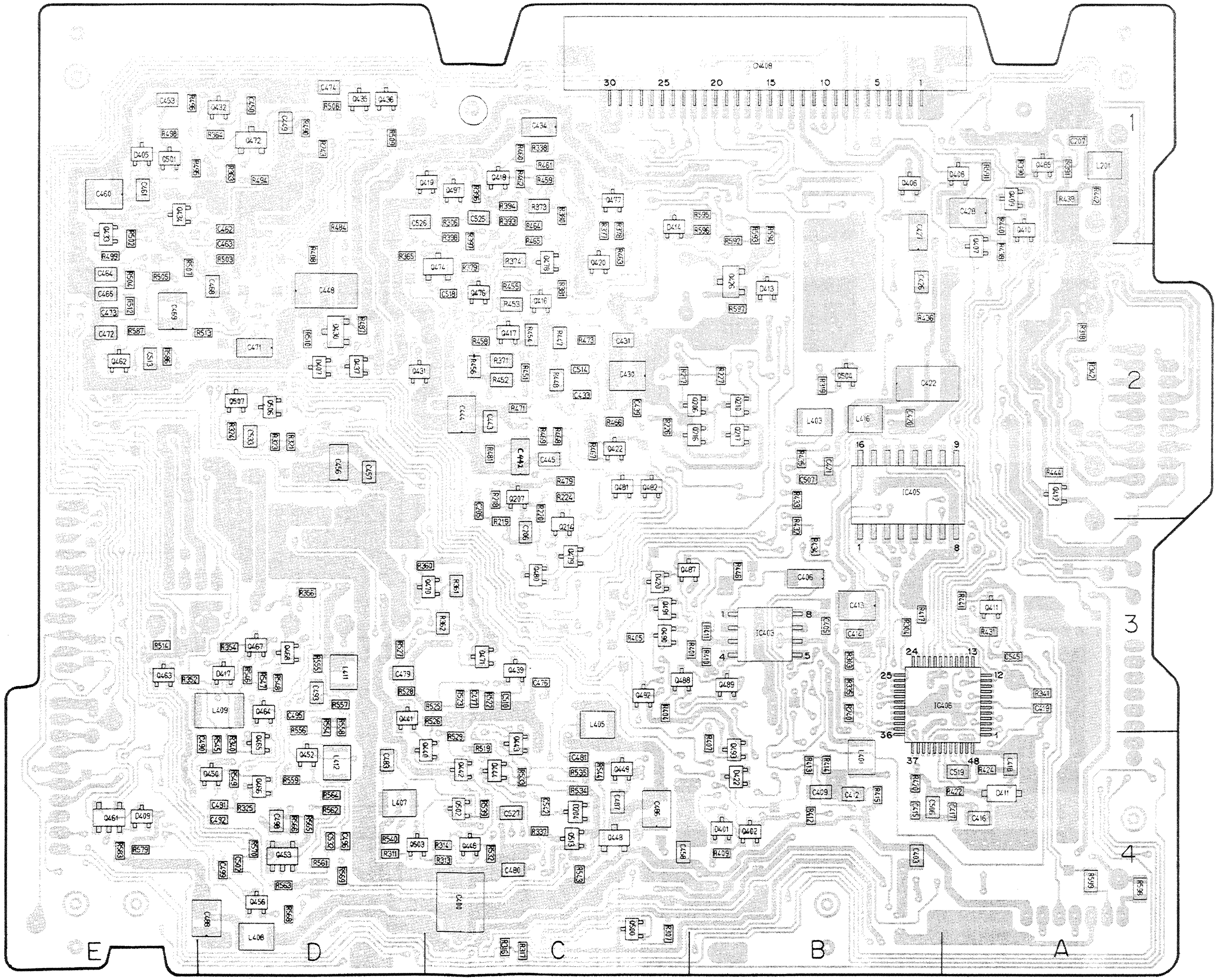


A Side is the same as COMPO


E
CN406
CN404
IC410
IC421
24
13
12
37
48
1
4
10
11

VO-32P —A SIDE—
1-635-109-11(1)
EVV-9000P

Side is the same as COMPONENT Side

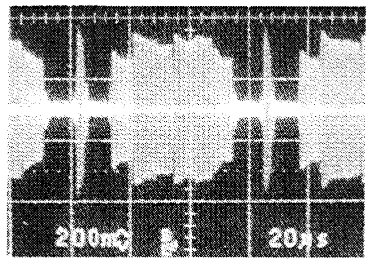

CN408
30
25
20
15
10
5
1
2
3
4
A
B
C
D
E
IC403
IC405
IC406
L401
L403
L405
L406
L407
L409
L411
L412
L416
Q422
Q448
C400
C406

VO-32P —B SIDE—
1-635-109-11(1)
EVV-9000P

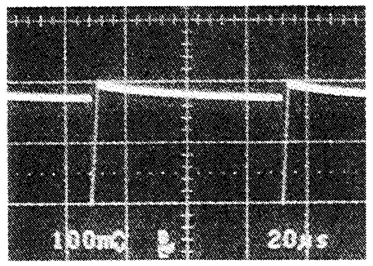
B Side is the same as SOLDER Side

VO-33P ; CHROMA PROCESS

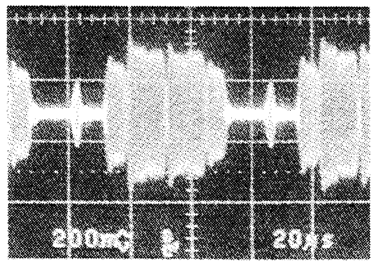
① TP605 EE mode



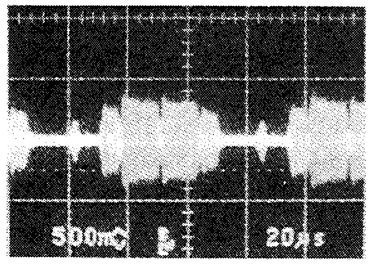
⑥ TP606 EE mode



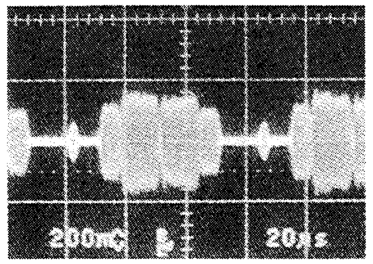
⑪ HD-8 board 33pin PB mode



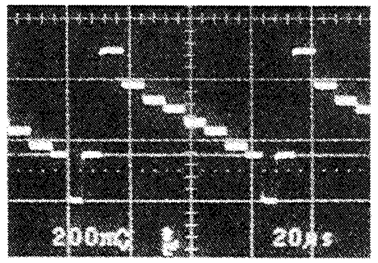
② IC602-38pin PB mode



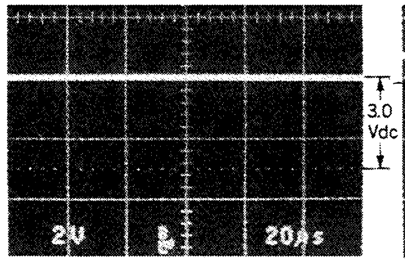
⑦ IC603-5pin PB mode



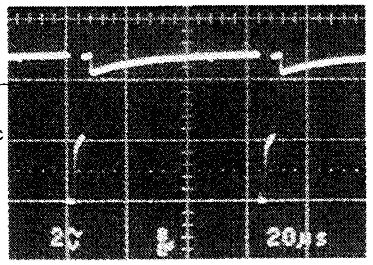
⑫ HD-8 board 30pin EE mode



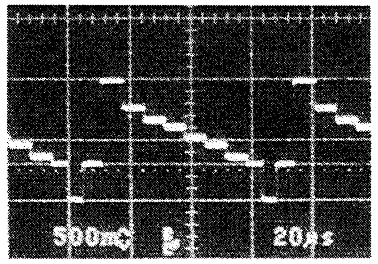
③ TP604 EE mode



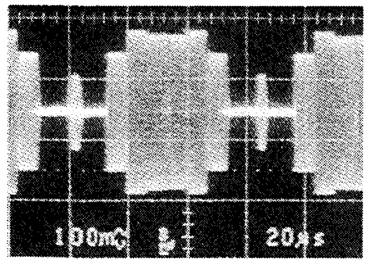
⑧ IC604-46pin EE mode



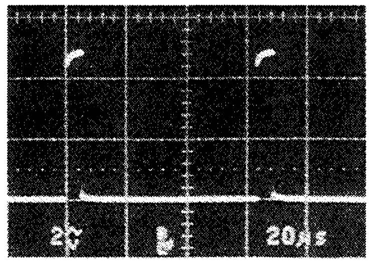
⑬ HD-8 board 26pin EE mode



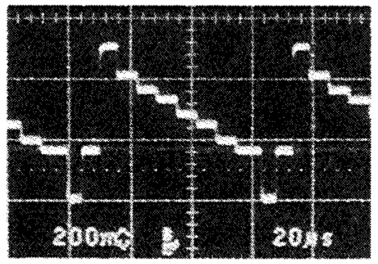
④ IC602-3pin EE mode



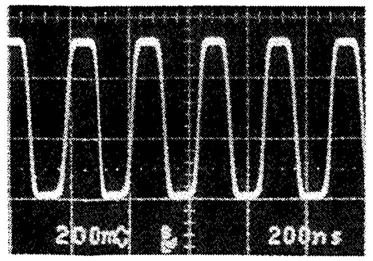
⑨ IC604-44pin EE mode



⑭ HD-8 board 23pin PB mode

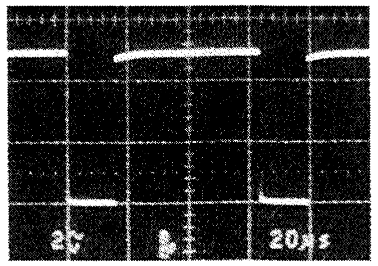


⑤ TP601 PB mode

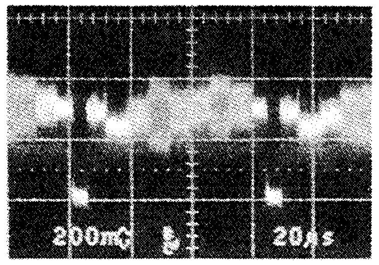


4.43MHz

⑩ IC604-33pin EE mode

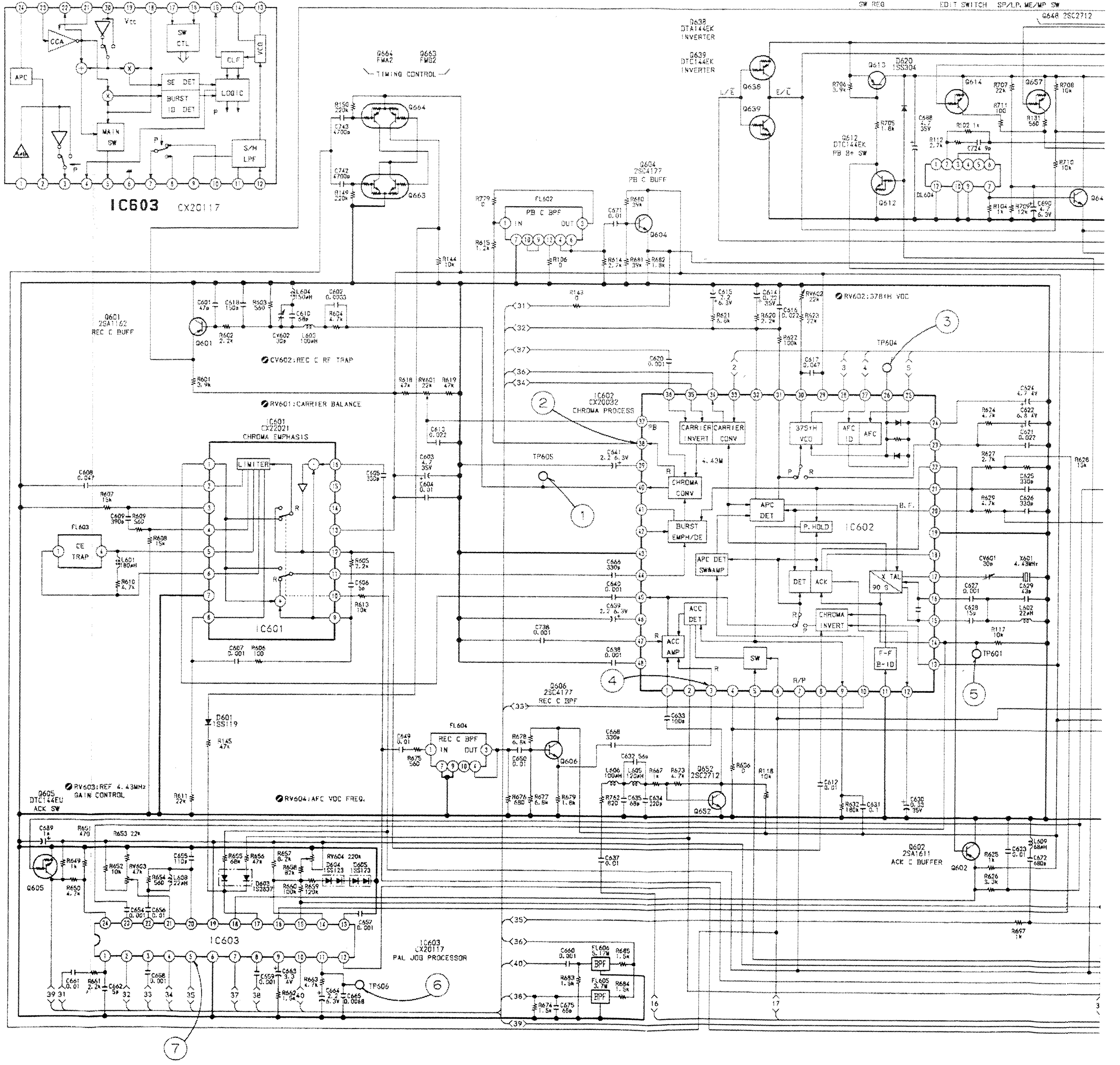


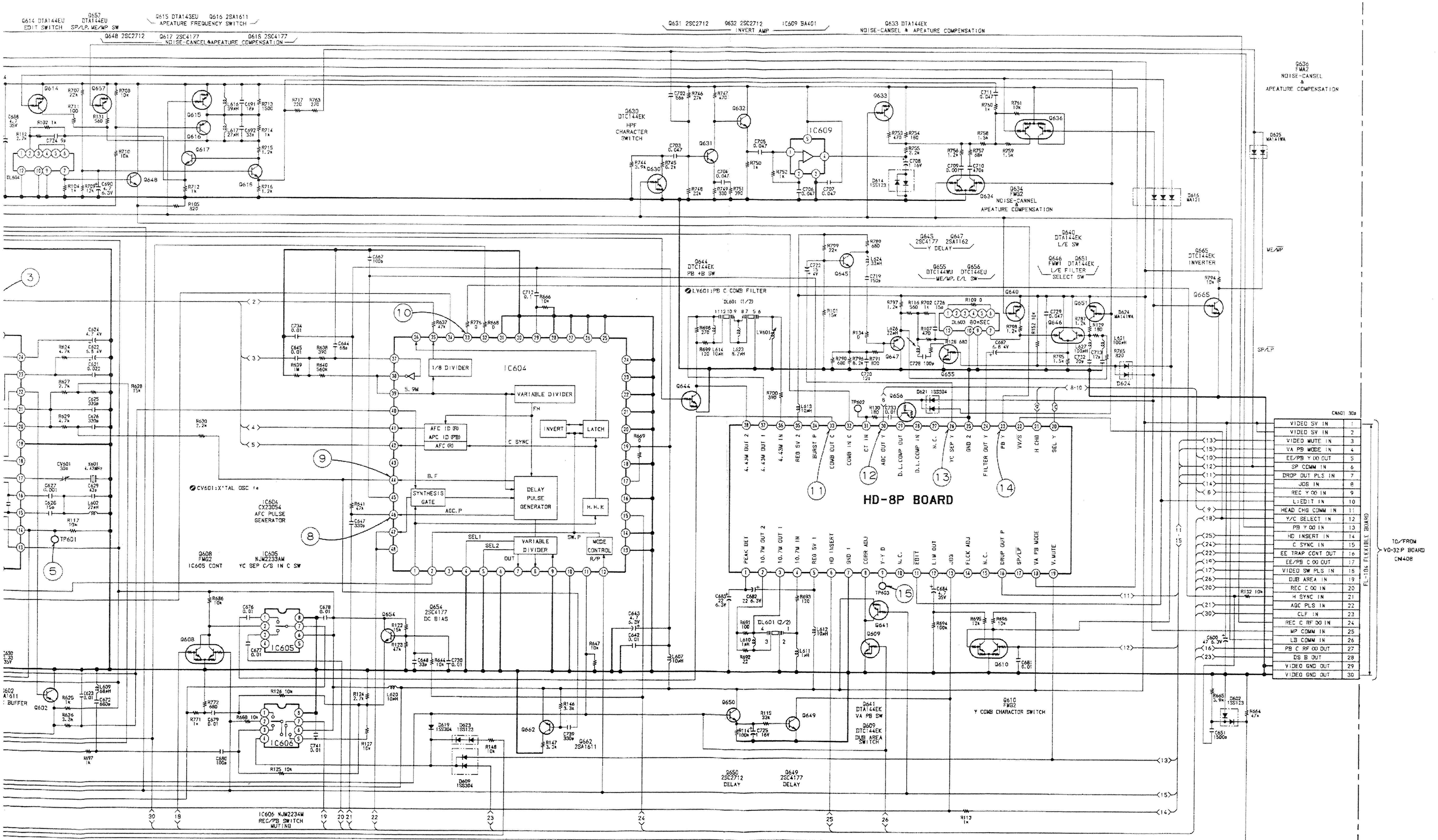
⑮ TP603 EE mode



Measurement Condition

- Input Signal : DXC-325P Test Color Bars
- Cassette Tape : EE mode···E5-60HME
  PB mode···Alignment Tape WR5-8CSE


IC603 CX20117
CCA
APC
SW CTL
SE DET
BURST ID DET
CLF
LOGIC
VCO
MAIN SW
S/H LPF
Q664 FMA2
Q663 FMB2
TIMING CONTROL
FL602 PB C BPF
Q604 2SC4177 PB C BUFF
Q638 DTA144EK INVERTER
Q639 DTC144EK INVERTER
Q613 2SB624 SW REG
Q614 DTA144EU EDIT SWITCH
Q657 DTA144EU SP/LP, ME/MP SW
Q648 2SC2712
Q612 DTC144EK PB B+ SW
Q601 2SA1162 REC C BUFF
CV602:REC C RF TRAP
RV601:CARRIER BALANCE
RV602:3781H VDC
IC601 CX22021 CHROMA EMPHASIS
LIMITER
FL603 EE TRAP
IC602 CX20032 CHROMA PROCESS
CARRIER INVERT
CARRIER CONV
375fH VCO
AFC ID
AFC
CHROMA CONV
BURST EMPH/DE
APC DET
P. HOLD
APC DET SWAMP
DET
ACK
X TAL 90°S
CHROMA INVERT
ACC DET
ACC AMP
SW
F-F B-ID
TP604
TP605
TP601
TP606
Q606 2SC4177 REC C BPF
FL604 REC C BPF
Q652 2SC2712
Q605 DTC144EU ACK SW
RV603:REF 4.43MHz GAIN CONTROL
RV604:AFC VDC FREQ.
D601 1SS119
IC603 CX20117 PAL JOG PROCESSOR
Q602 2SA1611 ACK C BUFFER
X601 4.43MHz
CV601
FL605 BPF
FL606 BPF
①
②
③
④
⑤
⑥
⑦


Q614 DTA144EU EDIT SWITCH
Q657 DTA144EU SP/LP, ME/MP SW
Q615 DTA143EU Q616 2SA1611 APEATURE FREQUENCY SWITCH
Q648 2SC2712
Q617 2SC4177 Q618 2SC4177 NOISE-CANCEL&APEATURE COMPENSATION
Q631 2SC2712 Q632 2SC2712 INVERT AMP
IC609 BA401
Q633 DTA144EK NOISE-CANSEL & APEATURE COMPENSATION
Q636 FMA7 NOISE-CANSEL & APEATURE COMPENSATION
Q630 DTC144EK HPF CHARACTER SWITCH
IC609
Q634 FMG2 NOISE-CANNEL & APEATURE COMPENSATION
D625 MA141WA
D616 MA121
D614 1SS123
Q645 2SC4177 Q647 2SA1162 Y DELAY
Q640 DTA144EK L/E SW
Q644 DTC144EK PB +B SW
Q655 DTC144WU Q656 DTC144EU ME/MP, E/L SW
Q646 FMW1 Q651 DTA144EK L/E FILTER SELECT SW
Q665 DTC144EK INVERTER
ME/MP
SP/LP
LV601:PB C COMB FILTER
DL601 (1/2)
DL603 80nSEC
D624 MA141WA
D621 1SS304
IC604
1/8 DIVIDER
5.9M
VARIABLE DIVIDER
FH
AFC ID (R)
APC ID (PB)
AFC (R)
C SYNC
INVERT
LATCH
SYNTHESIS GATE
DELAY PULSE GENERATOR
ACC.P
H.H.K
B.F
VARIABLE DIVIDER
SEL1
SEL2
OUT
SW.P
MODE CONTROL
R/P
CV601:X'TAL OSC fe
IC604 CX23054 AFC PULSE GENERATOR
Q608 FMG2 IC605 CONT
IC605 NJM2233AM YC SEP C/S IN C SW
TP601
CV601 30p
X601 4.43MHz
Q654 2SC4177 DC BIAS
IC605
IC606
Q602 A1611 BUFFER
Q662 2SA1611
D619 1SS304
D623 1SS123
D609 1SS304
IC606 NJM2234M REC/PB SWITCH MUTING
Q650 2SC2712 DELAY
Q649 2SC4177 DELAY
Q641 DTA144EK VA PB SW
Q609 DTC144EK DUB AREA SWITCH
Q610 FMG2 Y COMB CHARACTOR SWITCH
DL601 (2/2)
TP602
TP603
HD-8P BOARD
4.43M OUT 2
4.43M OUT 1
4.43M IN
REG SV 2
BURST P
COMB OUT C
COMB IN C
CT IN
AGC OUT Y
D.L.COMP OUT
D.L.COMP IN
N.C.
YC SEP Y
GND 2
FILTER OUT Y
PB Y
VI/S
H CHG
SEL Y
PEAK DET
10.7M OUT 2
10.7M OUT 1
10.7M IN
REG SV 1
HD INSERT
GND 1
CORR ADJ
Y-Y D
N.C.
EDIT
LIM OUT
JOG
FLCK ADJ
N.C.
DROP OUT P
SP/LP
VA PB MODE
V.MUTE
D602 1SS123
CN601 30p
FL-104 FLEXIBLE BOARD
TO/FROM VO-32P BOARD CN408
R132 10k
30 19 19 20 21 22 23 24 25 26

CN601 30p	
VIDEO SV IN	1
VIDEO SV IN	2
VIDEO MUTE IN	3
VA PB MODE IN	4
EE/PB Y (X) OUT	5
SP COMM IN	6
DROP OUT PLS IN	7
JOG IN	8
REC Y (X) IN	9
L:EDIT IN	10
HEAD CHG COMM IN	11
Y/C SELECT IN	12
PB Y (X) IN	13
HD INSERT IN	14
C SYNC IN	15
EE TRAP CONT OUT	16
EE/PB C (X) OUT	17
VIDEO SW PLS IN	18
DUB AREA IN	19
REC C (X) IN	20
H SYNC IN	21
AGC PLS IN	22
CLP IN	23
REC C RF (X) IN	24
MP COMM IN	25
LB COMM IN	26
PB C RF (X) OUT	27
DS B OUT	28
VIDEO GND OUT	29
VIDEO GND OUT	30

VO-33P

1-635-110-11(1)
EVV-9000P

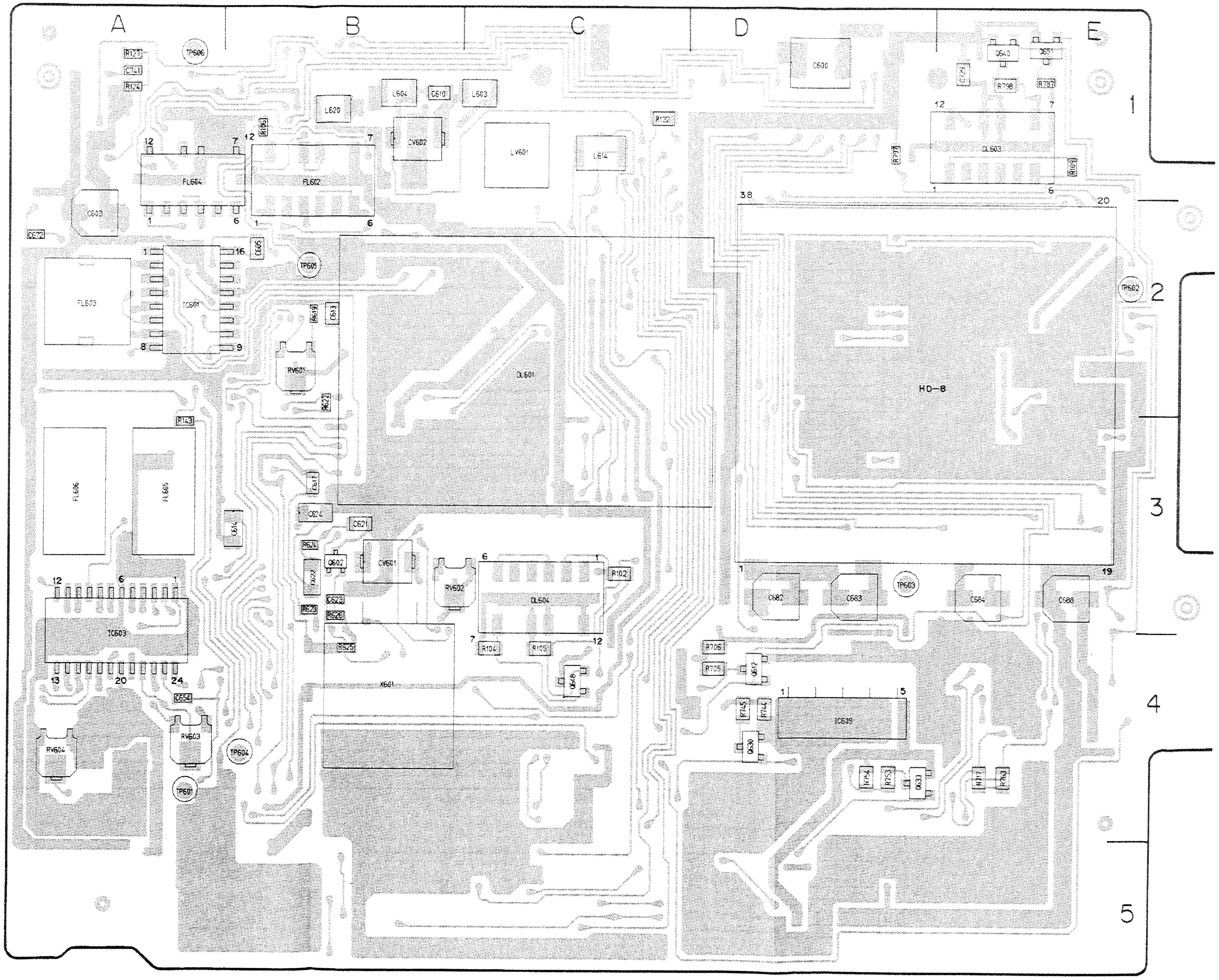
VO-33P ; CHROMA PROCESS

VO-33P(1-635-110-11) A SIDE

CV601	B-3
CV602	B-1
DL601	C-2
DL603	E-1
DL604	C-3
FL602	B-2
FL603	A-2
FL604	A-1
FL605	A-3
FL606	A-3
HD-8P BOARD	D-1
IC601	A-2
IC603	A-4
IC609	D-4
LV601	C-1
Q602	B-3
Q612	D-4
Q630	D-4
Q633	D-4
Q640	E-1
Q648	C-4
Q651	E-1
RV601	B-2
RV602	B-3
RV603	A-4
RV604	A-4
X601	B-4

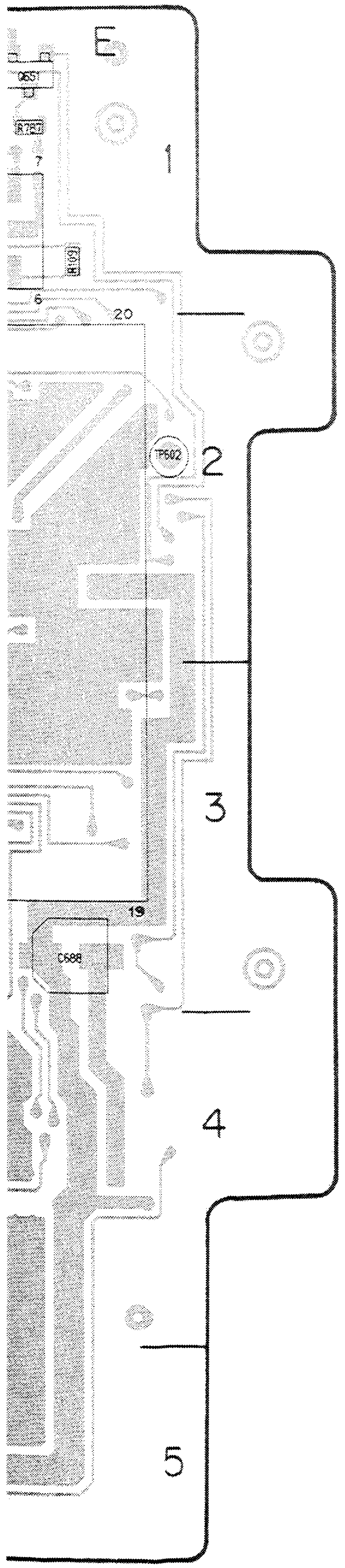
VO-33P(1-635-110-11) B SIDE

CN601	D-1
D602	C-4
D603	A-4
D604	A-4
D605	A-4
D609	A-1
D614	D-4
D616	E-4
D619	A-1
D620	C-4
D621	D-2
D623	C-4
D624	E-2
D625	E-4
IC602	B-2
IC604	B-4
IC605	B-1
IC606	A-1
Q601	C-1
Q604	B-2
Q605	A-4
Q606	A-2
Q608	A-1
Q609	D-3
Q610	E-4
Q613	D-4
Q614	D-5
Q615	E-5
Q616	E-5
Q617	E-4
Q618	E-4
Q631	D-4
Q632	D-4
Q634	D-4
Q636	E-4
Q638	D-5
Q639	D-5
Q641	D-3
Q644	C-2
Q645	E-2
Q646	E-1
Q647	D-1
Q649	D-2
Q650	D-2
Q652	C-2
Q654	A-2
Q655	E-2
Q656	D-2
Q657	E-5
Q662	C-4
Q663	C-2
Q664	C-2
Q665	E-4
TP601	A-4
TP602	E-2
TP603	D-3
TP604	B-4
TP605	B-2
TP606	A-1


A
B
C
D
E
1
2
3
4
5
TP606
FL604
FL602
L620
L604
C610
L603
CV602
LV601
L614
R132
C600
Q640
Q651
DL603
C603
FL603
IC601
TP605
RV601
DL601
HD-8
TP602
FL606
FL605
C614
C624
C621
Q602
CV601
RV602
DL604
R102
R104
R105
C682
C683
TP603
C684
C688
IC603
X601
R706
R705
Q612
IC609
Q630
Q633
RV604
RV603
TP604
TP601
38
20
1
19
12
7
6
16
8
9
13
24

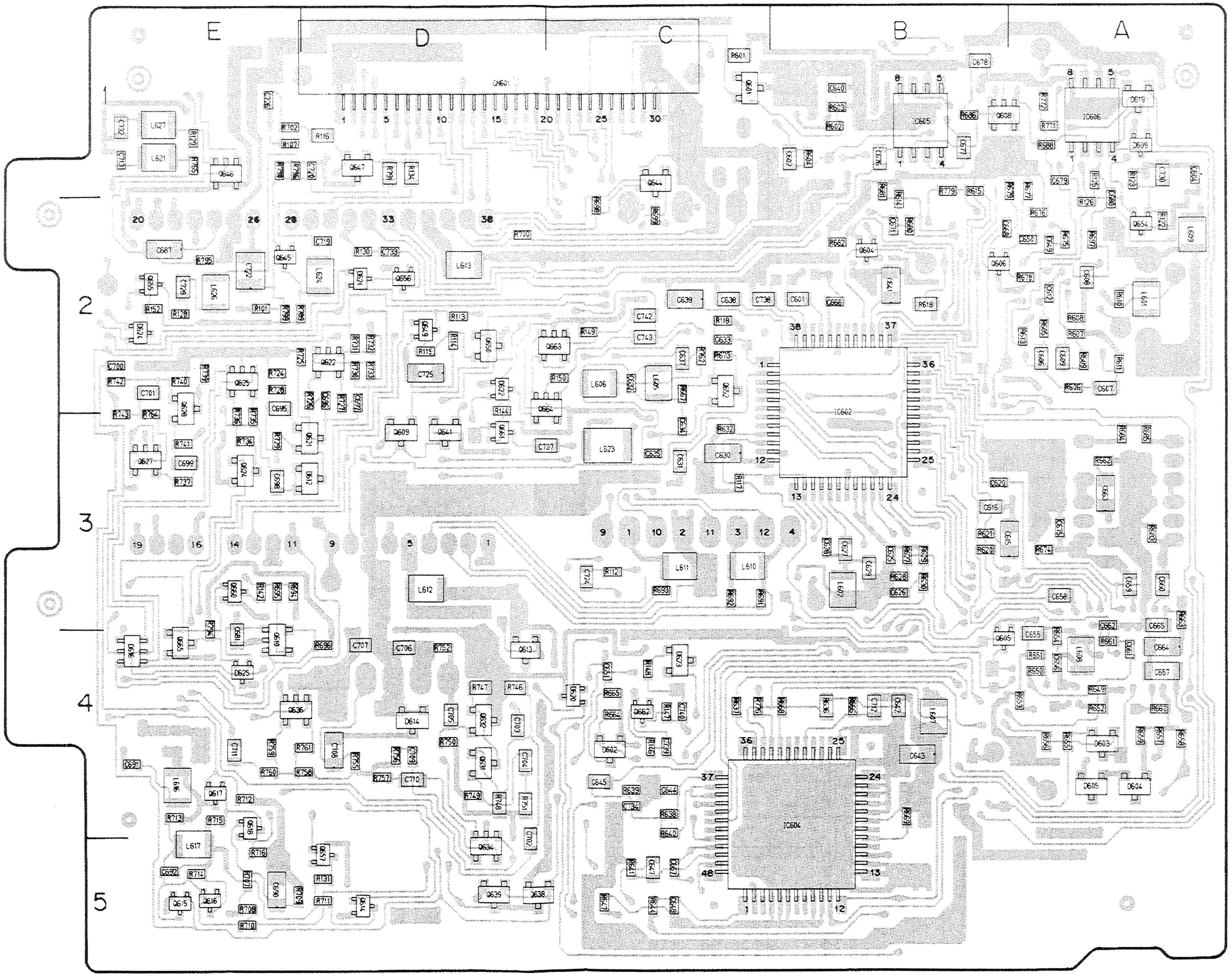
VO-33P —A SIDE—
1-635-110-11(1)
EVV-9000P

A Side is the same as COMPONENT Side


E
1
2
3
4
5
Q651
TP602
20
19
C688

VO-33P —A SIDE—
1-635-110-11(1)
EVV-9000P

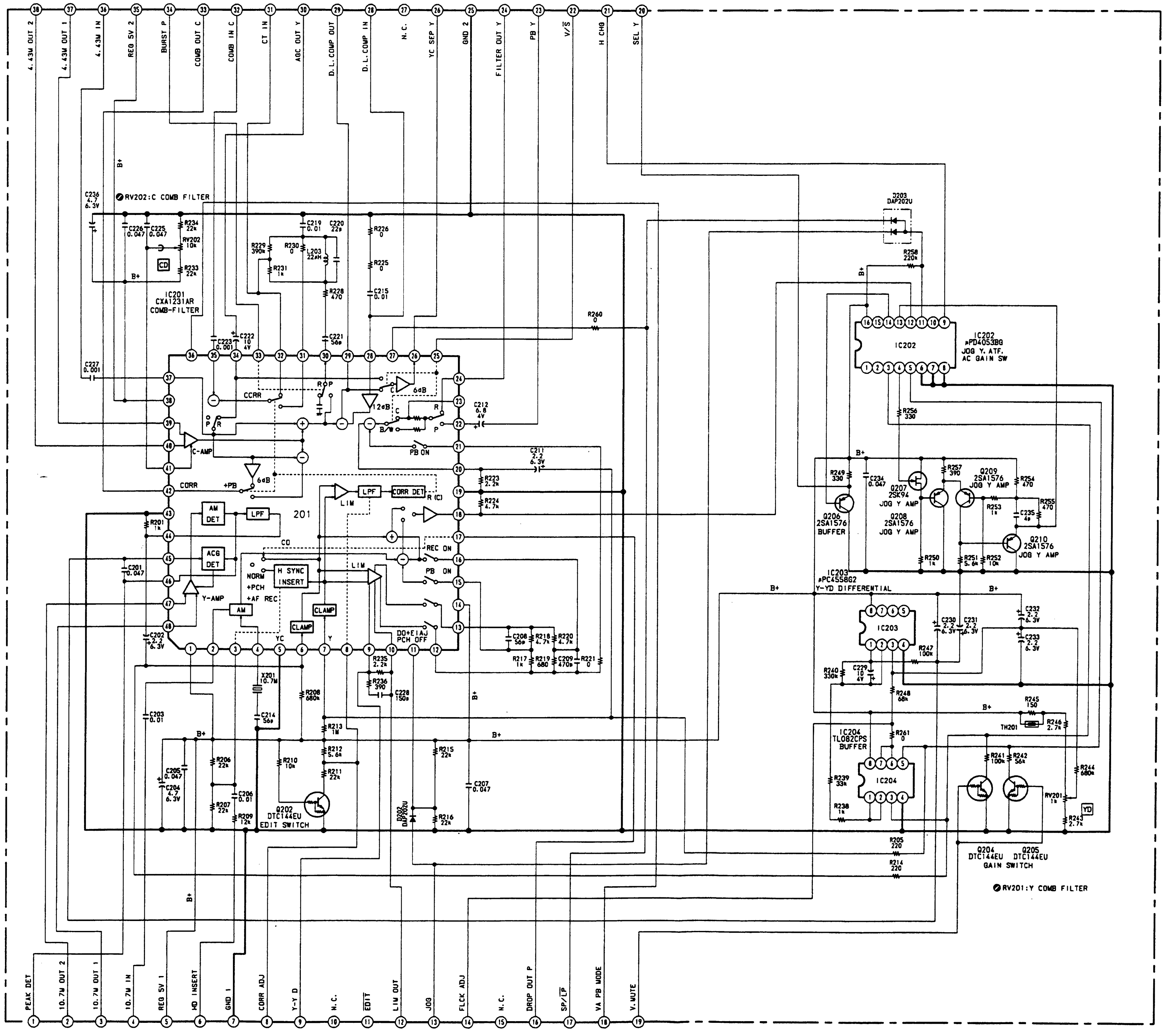
COMPONENT Side

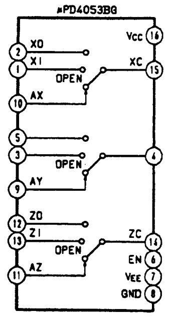

E
D
C
B
A
1
2
3
4
5
CN601
IC602
IC604
IC605
IC606
L612
L613
L623
L606
L610
L611
L617
L621
L627
Q601
Q602
Q603
Q604
Q605
Q606
Q608
Q644
Q647
Q663
Q664
R601
R116
C725
C737
C630

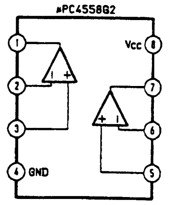
VO-33P —B SIDE—
1-635-110-11(1)
EVV-9000P

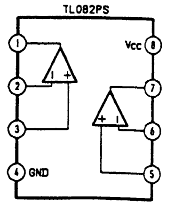
B Side is the same as SOLDER Side

HD-8P; COMB FILTER
CC-43; CAMERA CONNECTION

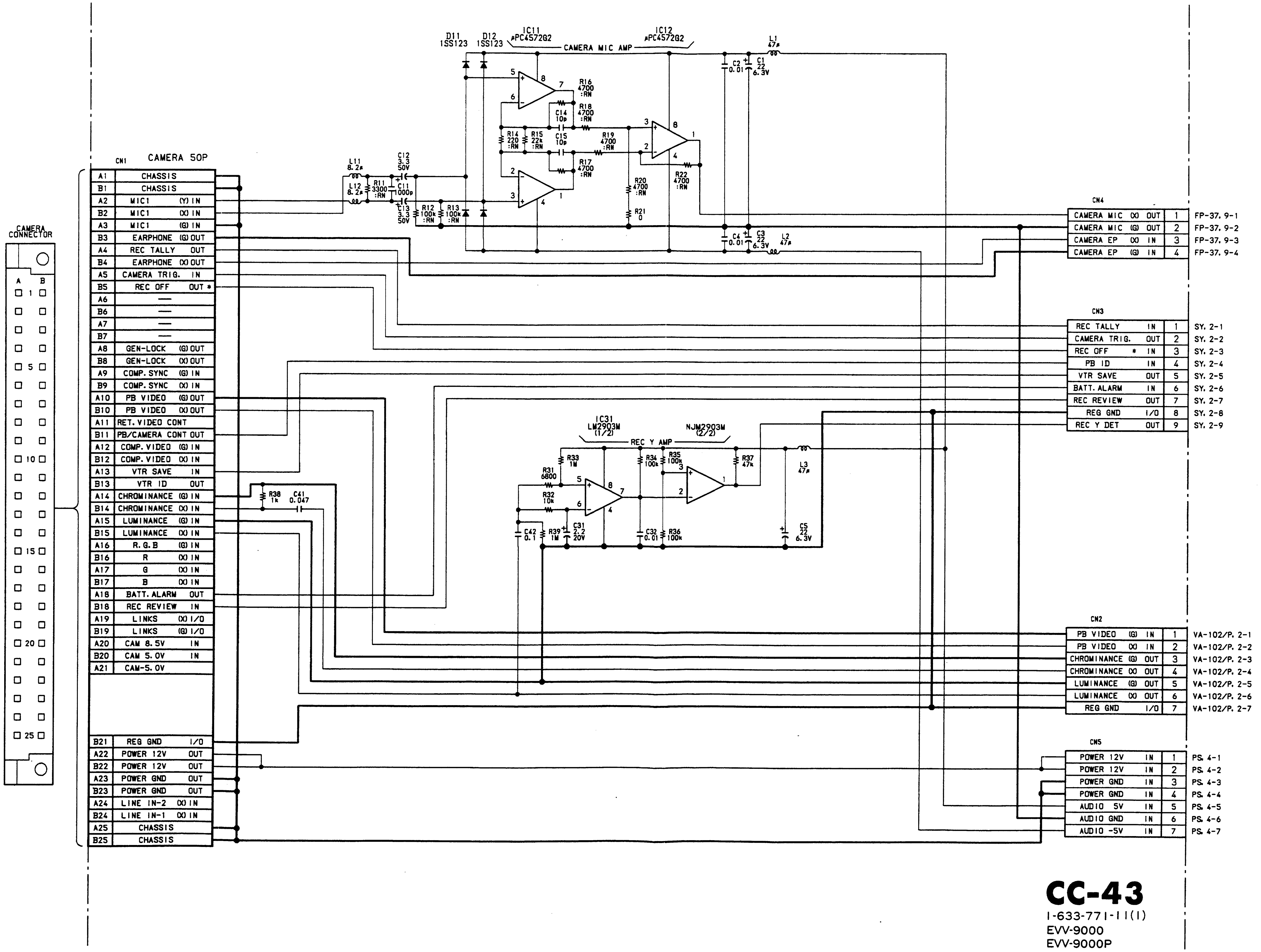

1
2
3
4
5
4.43M OUT 2
4.43M OUT 1
4.43M IN
REG 5V 2
BURST P
COMB OUT C
COMB IN C
CT IN
AGC OUT Y
D.L.COMP OUT
D.L.COMP IN
N.C.
YC SEP Y
GND 2
FILTER OUT Y
PB Y
V/S
H CHG
SEL Y
RV202:C COMB FILTER
IC201
CXA1231AR
COMB-FILTER
D203
DAP202U
IC202
µPD4053BG
JOG Y, ATF,
AC GAIN SW
Q206
2SA1576
BUFFER
Q207
2SK94
JOG Y AMP
Q208
2SA1576
JOG Y AMP
Q209
2SA1576
JOG Y AMP
Q210
2SA1576
JOG Y AMP
IC203
µPC4558G2
Y-YD DIFFERENTIAL
IC204
TL082CPS
BUFFER
Q202
DTC144EU
EDIT SWITCH
Q204 Q205
DTC144EU DTC144EU
GAIN SWITCH
RV201:Y COMB FILTER
C-AMP
Y-AMP
CORR
AM DET
ACG DET
LPF
CORR DET
LIM
H SYNC INSERT
CLAMP
NORM
+PCH
+AF REC
REC ON
PB ON
DO+EIAJ PCH OFF
6dB
12dB
X201 10.7M
PEAK DET
10.7M OUT 2
10.7M OUT 1
10.7M IN
REG 5V 1
HD INSERT
GND 1
CORR ADJ
Y-Y D
N.C.
EDIT
LIM OUT
JOG
FLCK ADJ
N.C.
DROP OUT P
SP/LP
VA PB MODE
V.MUTE


µPD4053BG
XO
XI
AX
OPEN
AY
ZO
ZI
AZ
Vcc
XC
ZC
EN
VEE
GND


µPC4558G2
Vcc
GND


TL082PS
Vcc
GND

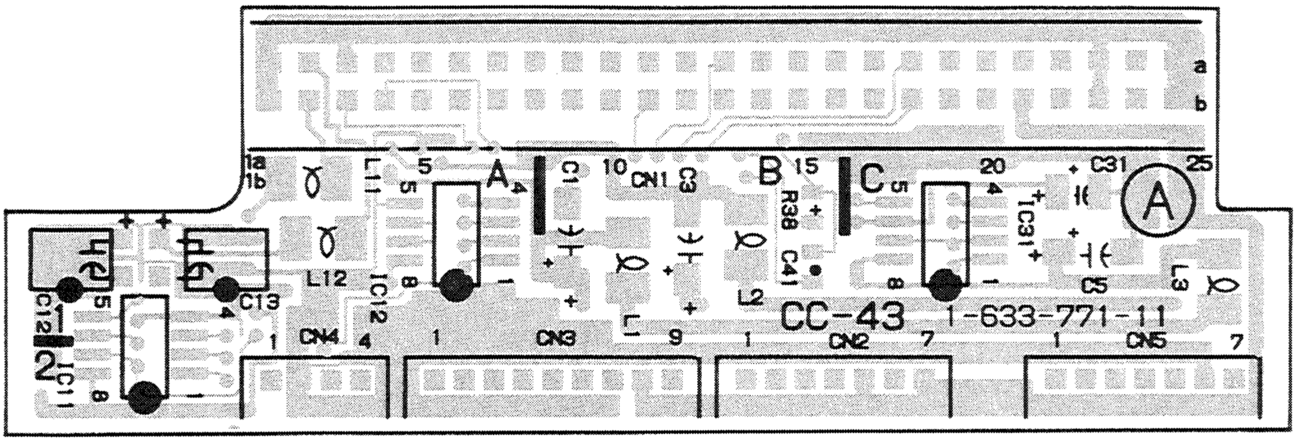
HD-8P
EVV-9000P


CAMERA CONNECTOR
A
B
1
5
10
15
20
25
CN1 CAMERA 50P
A1 CHASSIS
B1 CHASSIS
A2 MIC1 (Y) IN
B2 MIC1 (X) IN
A3 MIC1 (G) IN
B3 EARPHONE (G) OUT
A4 REC TALLY OUT
B4 EARPHONE (X) OUT
A5 CAMERA TRIG. IN
B5 REC OFF OUT *
A6 —
B6 —
A7 —
B7 —
A8 GEN-LOCK (G) OUT
B8 GEN-LOCK (X) OUT
A9 COMP. SYNC (G) IN
B9 COMP. SYNC (X) IN
A10 PB VIDEO (G) OUT
B10 PB VIDEO (X) OUT
A11 RET. VIDEO CONT
B11 PB/CAMERA CONT OUT
A12 COMP. VIDEO (G) IN
B12 COMP. VIDEO (X) IN
A13 VTR SAVE IN
B13 VTR ID OUT
A14 CHROMINANCE (G) IN
B14 CHROMINANCE (X) IN
A15 LUMINANCE (G) IN
B15 LUMINANCE (X) IN
A16 R. G. B (G) IN
B16 R (X) IN
A17 G (X) IN
B17 B (X) IN
A18 BATT. ALARM OUT
B18 REC REVIEW IN
A19 LINKS (X) I/O
B19 LINKS (G) I/O
A20 CAM 8.5V IN
B20 CAM 5.0V IN
A21 CAM-5.0V
B21 REG GND I/O
A22 POWER 12V OUT
B22 POWER 12V OUT
A23 POWER GND OUT
B23 POWER GND OUT
A24 LINE IN-2 (X) IN
B24 LINE IN-1 (X) IN
A25 CHASSIS
B25 CHASSIS
L11 8.2µ
L12 8.2µ
R11 3300 :RN
C11 1000p
C12 3.3 50V
C13 3.3 50V
R12 100k :RN
R13 100k :RN
D11 1SS123
D12 1SS123
IC11 µPC4572G2
CAMERA MIC AMP
IC12 µPC4572G2
R14 220 :RN
R15 22k :RN
C14 10p
C15 10p
R16 4700 :RN
R17 4700 :RN
R18 4700 :RN
R19 4700 :RN
R20 4700 :RN
R21 0
R22 4700 :RN
C1 22 6.3V
C2 0.01
C3 22 6.3V
C4 0.01
L1 47µ
L2 47µ
IC31 LM2903M (1/2)
REC Y AMP
NJM2903M (2/2)
R31 6800
R32 10k
R33 1M
R34 100k
R35 100k
R36 100k
R37 47k
R38 1k
R39 1M
C31 2.2 20V
C32 0.01
C41 0.047
C42 0.1
C5 22 6.3V
L3 47µ
CN4
CAMERA MIC (X) OUT 1 FP-37, 9-1
CAMERA MIC (G) OUT 2 FP-37, 9-2
CAMERA EP (X) IN 3 FP-37, 9-3
CAMERA EP (G) IN 4 FP-37, 9-4
CN3
REC TALLY IN 1 SY, 2-1
CAMERA TRIG. OUT 2 SY, 2-2
REC OFF * IN 3 SY, 2-3
PB ID IN 4 SY, 2-4
VTR SAVE OUT 5 SY, 2-5
BATT. ALARM IN 6 SY, 2-6
REC REVIEW OUT 7 SY, 2-7
REG GND I/O 8 SY, 2-8
REC Y DET OUT 9 SY, 2-9
CN2
PB VIDEO (G) IN 1 VA-102/P, 2-1
PB VIDEO (X) IN 2 VA-102/P, 2-2
CHROMINANCE (G) OUT 3 VA-102/P, 2-3
CHROMINANCE (X) OUT 4 VA-102/P, 2-4
LUMINANCE (G) OUT 5 VA-102/P, 2-5
LUMINANCE (X) OUT 6 VA-102/P, 2-6
REG GND I/O 7 VA-102/P, 2-7
CN5
POWER 12V IN 1 PS, 4-1
POWER 12V IN 2 PS, 4-2
POWER GND IN 3 PS, 4-3
POWER GND IN 4 PS, 4-4
AUDIO 5V IN 5 PS, 4-5
AUDIO GND IN 6 PS, 4-6
AUDIO -5V IN 7 PS, 4-7

CC-43

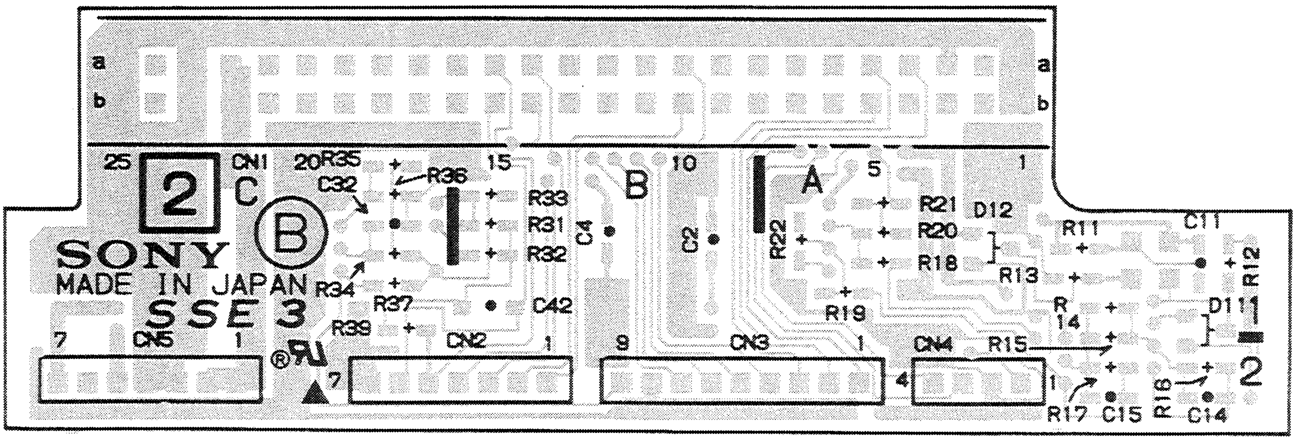
1-633-771-11(1)
EVV-9000
EVV-9000P

CC-43 ; CAMERA CONNECTION


a
b
1a
1b
L11
5
A
C1
10
CN1
C3
B
15
R38
C41
C
20
C31
IC31
25
A
C5
L3
L12
IC12
8
L2
CC-43 1-633-771-11
IC13
C13
C12
1
2
IC11
CN4
4
1
CN3
9
CN2
7
CN5
7

A Side is the same as COMPONENT Side

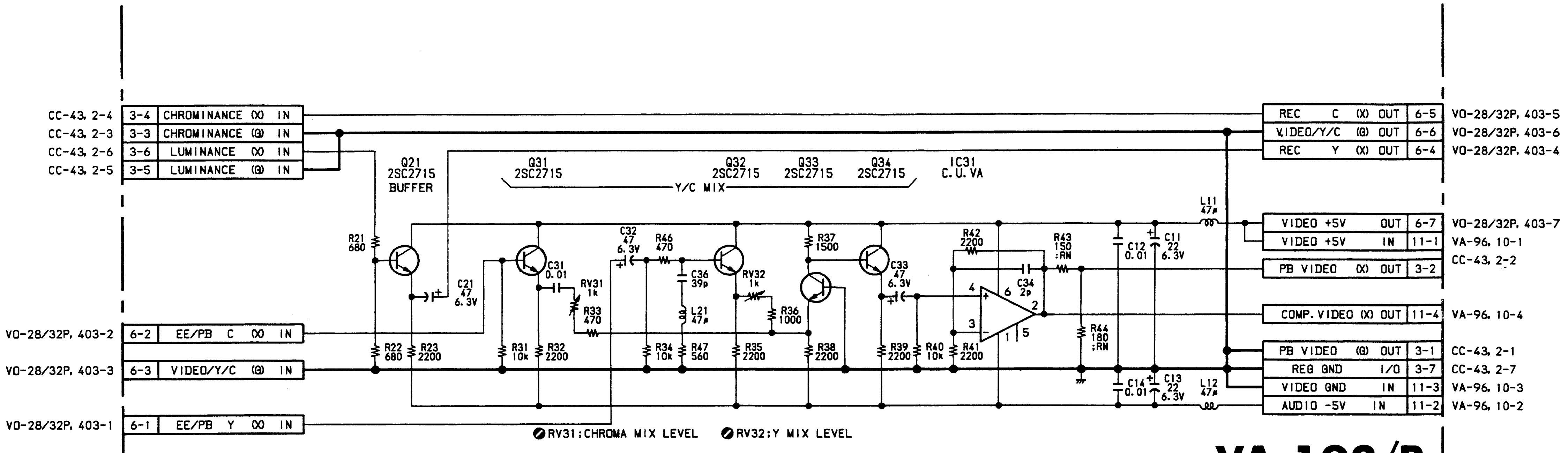
CC-43 A SIDE
1-633-771-11(1)
EVV-9000
EVV-9000P


a
b
25
CN1
C
2
20
R35
C32
R36
15
R33
R31
R32
R34
R37
R39
C42
C4
B
10
C2
R22
A
5
R21
R20
R18
D12
R19
1
R11
C11
R13
R12
R14
D11
R15
R16
R17
C15
C14
1
2
B
SONY
MADE IN JAPAN
SSE 3
CN5
7
1
CN2
7
1
CN3
9
1
CN4
4
1

B Side is the same as SOLDER Side

CC-43 B SIDE
1-633-771-11(1)
EVV-9000
EVV-9000P

VA-102P ; EE/PB Y/C MIX


CC-43, 2-4
3-4 CHROMINANCE (X) IN
CC-43, 2-3
3-3 CHROMINANCE (G) IN
CC-43, 2-6
3-6 LUMINANCE (X) IN
CC-43, 2-5
3-5 LUMINANCE (G) IN
VO-28/32P, 403-2
6-2 EE/PB C (X) IN
VO-28/32P, 403-3
6-3 VIDEO/Y/C (G) IN
VO-28/32P, 403-1
6-1 EE/PB Y (X) IN
Q21 2SC2715 BUFFER
Q31 2SC2715
Q32 2SC2715
Q33 2SC2715
Q34 2SC2715
Y/C MIX
IC31 C.U.VA
R21 680
C21 47 6.3V
R22 680
R23 2200
C31 0.01
RV31 1k
R33 470
R31 10k
R32 2200
C32 47 6.3V
R46 470
C36 39p
L21 47µ
R34 10k
R47 560
RV32 1k
R36 1000
R35 2200
R37 1500
R38 2200
C33 47 6.3V
R39 2200
R40 10k
R41 2200
R42 2200
C34 2p
R43 150 :RN
R44 180 :RN
C12 0.01
C11 22 6.3V
L11 47µ
C14 0.01
C13 22 6.3V
L12 47µ
RV31;CHROMA MIX LEVEL
RV32;Y MIX LEVEL
REC C (X) OUT 6-5
VO-28/32P, 403-5
VIDEO/Y/C (G) OUT 6-6
VO-28/32P, 403-6
REC Y (X) OUT 6-4
VO-28/32P, 403-4
VIDEO +5V OUT 6-7
VO-28/32P, 403-7
VIDEO +5V IN 11-1
VA-96, 10-1
PB VIDEO (X) OUT 3-2
CC-43, 2-2
COMP. VIDEO (X) OUT 11-4
VA-96, 10-4
PB VIDEO (G) OUT 3-1
CC-43, 2-1
REG GND I/O 3-7
CC-43, 2-7
VIDEO GND IN 11-3
VA-96, 10-3
AUDIO -5V IN 11-2
VA-96, 10-2

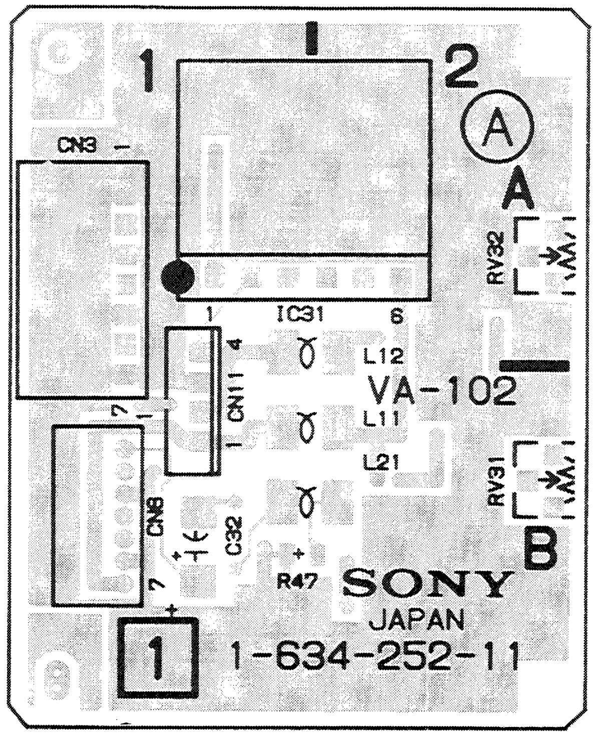
	C36	L21
NTSC	39pF	47uH
PAL	33pF	39uH

VA-102/P

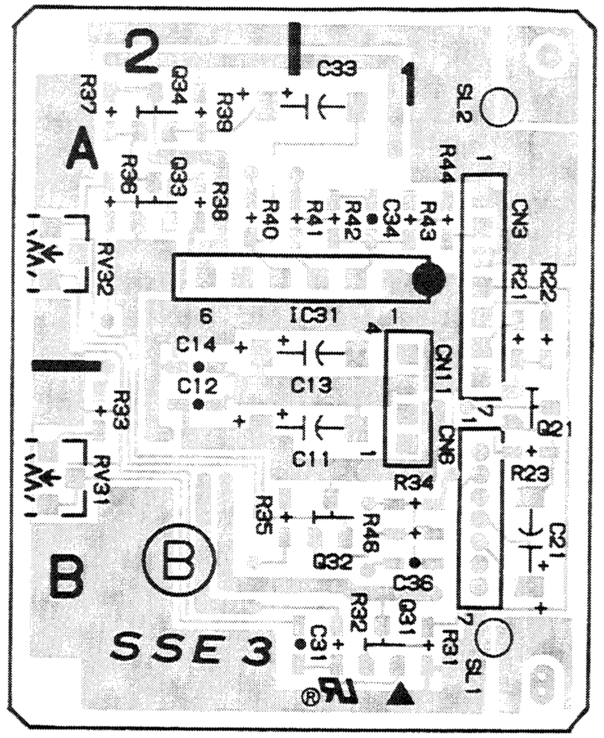
1-634-252-11 (1)
EVV-9000
EVV-9000P

VA-102P ; EE/PB Y/C MIX

1


1
2
Ⓐ
A
CN3
RV32
1
IC31
6
4
CN11
1
7
L12
VA-102
L11
L21
RV31
B
CN8
7
C32
R47
SONY
JAPAN
1
1-634-252-11

VA-102/P —A SIDE—
1-634-252-11(1)
EVV-9000
EVV-9000P


2
1
C33
SL2
R37
Q34
R39
A
R36
Q33
R38
R40
R41
R42
C34
R43
R44
CN3
R22
R21
RV32
6
IC31
1
C14
C12
C13
CN11
R33
C11
CN8
Q21
R23
RV31
R34
R35
R46
C21
B
Ⓑ
Q32
C36
R32
Q31
R31
SL1
SSE 3
C31

VA-102/P —B SIDE—
1-634-252-11(1)
EVV-9000
EVV-9000P

A Side is the same as COMPONENT Side

B Side is the same as SOLDER Side

2

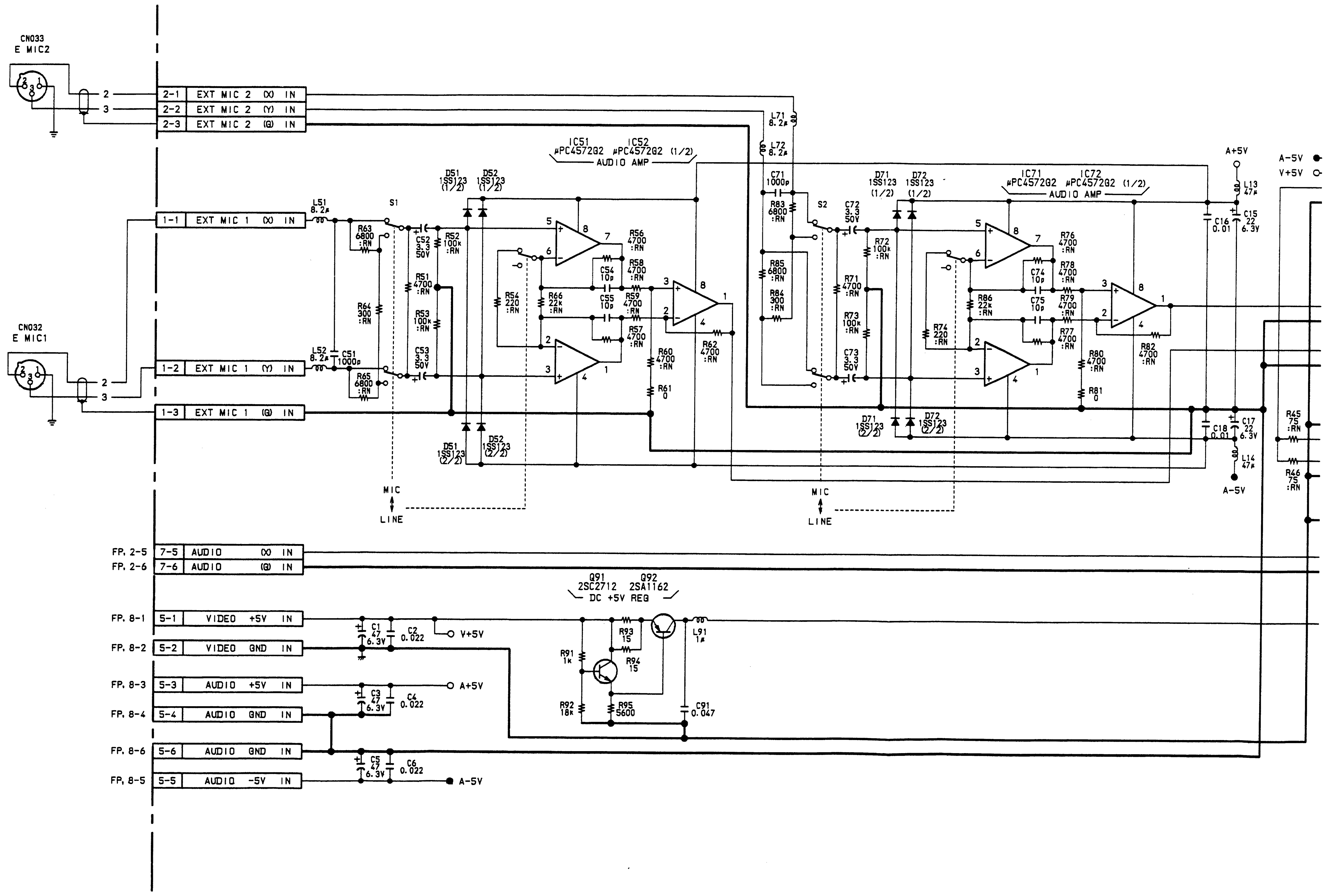
3

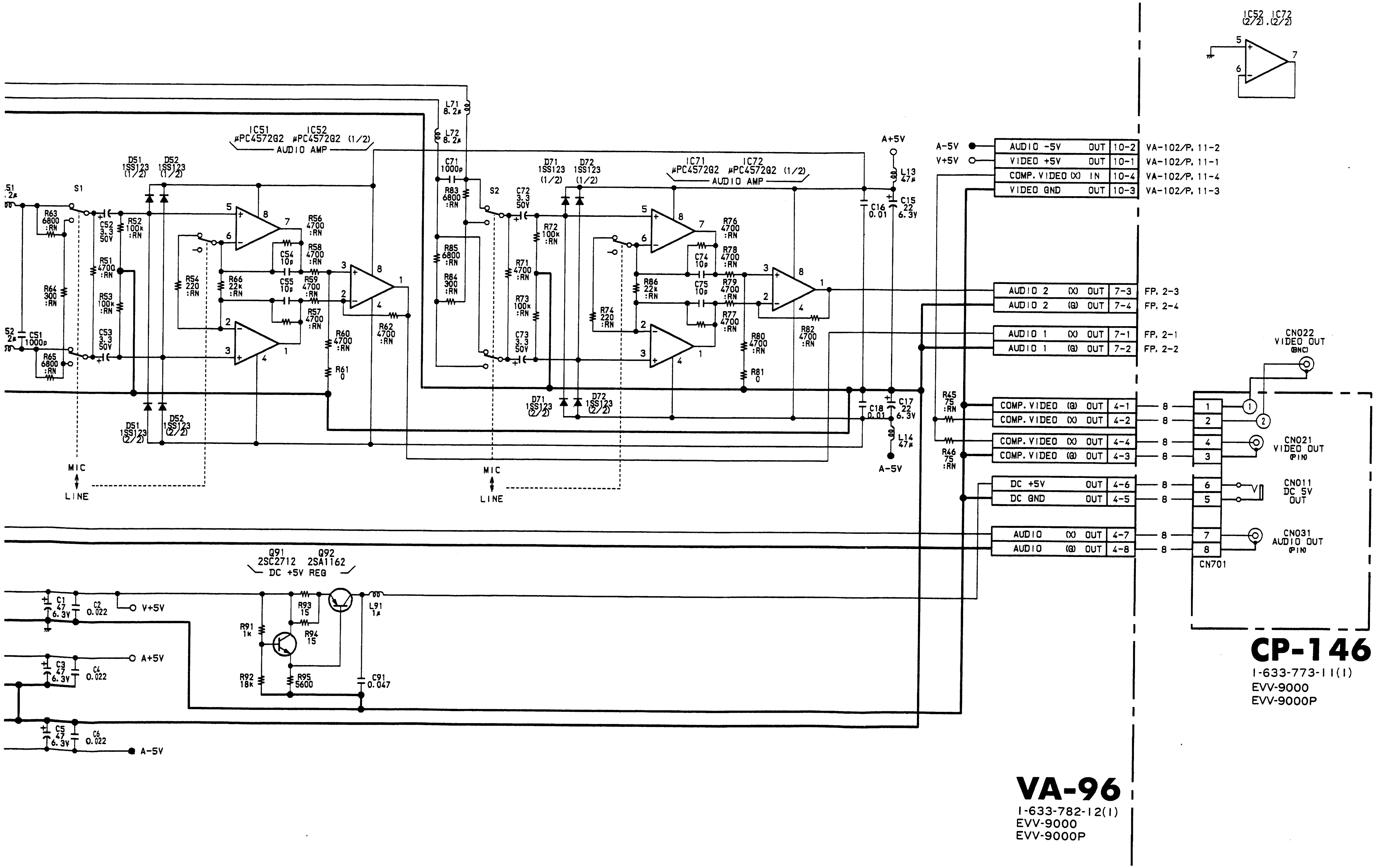
4

5

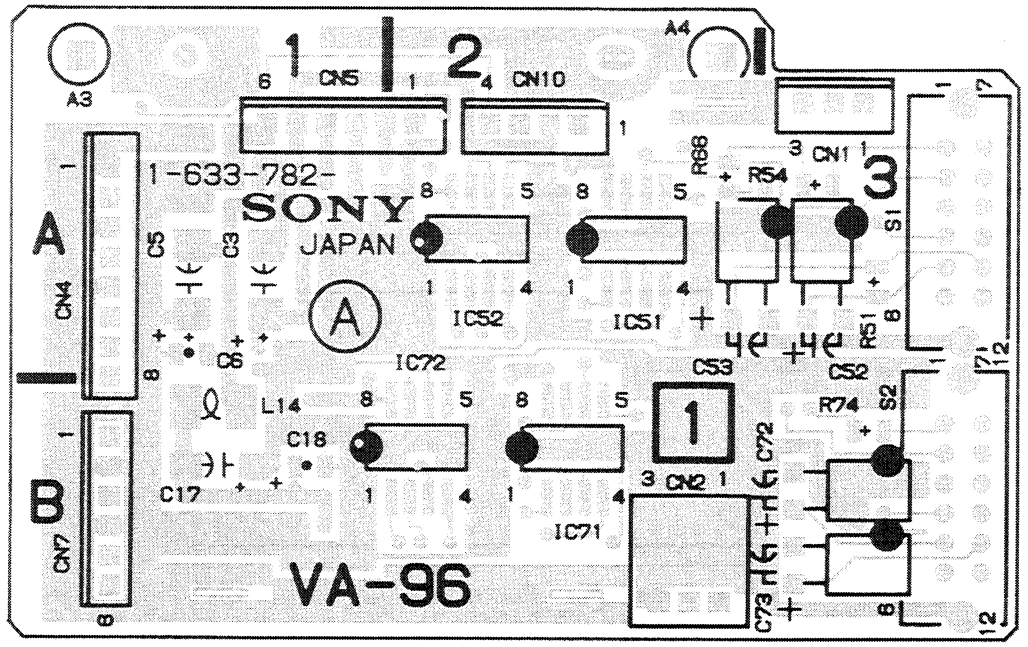
I J K L

VA-96; AUDIO INPUT AMPLIFIER
CP-146; CONNECTOR PANEL

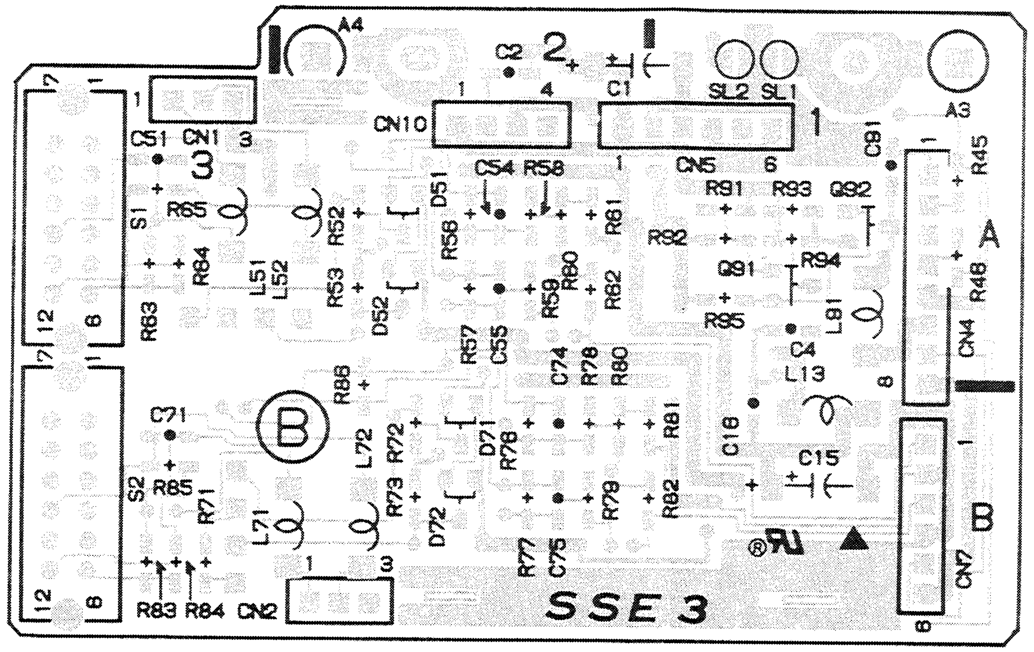

CN033
E MIC2
2-1 EXT MIC 2 (X) IN
2-2 EXT MIC 2 (Y) IN
2-3 EXT MIC 2 (G) IN
CN032
E MIC1
1-1 EXT MIC 1 (X) IN
1-2 EXT MIC 1 (Y) IN
1-3 EXT MIC 1 (G) IN
IC51 μPC4572G2 IC52 μPC4572G2 (1/2) AUDIO AMP
IC71 μPC4572G2 IC72 μPC4572G2 (1/2) AUDIO AMP
D51 1SS123 (1/2)
D52 1SS123 (1/2)
D51 1SS123 (2/2)
D52 1SS123 (2/2)
D71 1SS123 (1/2)
D72 1SS123 (1/2)
D71 1SS123 (2/2)
D72 1SS123 (2/2)
L51 8.2μ
L52 8.2μ
L71 8.2μ
L72 8.2μ
S1
S2
C51 1000p
C52 3.3 50V
C53 3.3 50V
C54 10p
C55 10p
C71 1000p
C72 3.3 50V
C73 3.3 50V
C74 10p
C75 10p
R51 4700 :RN
R52 100k :RN
R53 100k :RN
R54 220 :RN
R56 4700 :RN
R57 4700 :RN
R58 4700 :RN
R59 4700 :RN
R60 4700 :RN
R61 0
R62 4700 :RN
R63 6800 :RN
R64 300 :RN
R65 6800 :RN
R66 22k :RN
R71 4700 :RN
R72 100k :RN
R73 100k :RN
R74 220 :RN
R76 4700 :RN
R77 4700 :RN
R78 4700 :RN
R79 4700 :RN
R80 4700 :RN
R81 0
R82 4700 :RN
R83 6800 :RN
R84 300 :RN
R85 6800 :RN
R86 22k :RN
MIC
LINE
A+5V
A-5V
V+5V
L13 47μ
L14 47μ
C15 22 6.3V
C16 0.01
C17 22 6.3V
C18 0.01
R45 75 :RN
R46 75 :RN
FP, 2-5 7-5 AUDIO (X) IN
FP, 2-6 7-6 AUDIO (G) IN
Q91 2SC2712 Q92 2SA1162
DC +5V REG
FP, 8-1 5-1 VIDEO +5V IN
FP, 8-2 5-2 VIDEO GND IN
FP, 8-3 5-3 AUDIO +5V IN
FP, 8-4 5-4 AUDIO GND IN
FP, 8-6 5-6 AUDIO GND IN
FP, 8-5 5-5 AUDIO -5V IN
C1 47 6.3V
C2 0.022
C3 47 6.3V
C4 0.022
C5 47 6.3V
C6 0.022
V+5V
A+5V
A-5V
R91 1k
R92 18k
R93 15
R94 15
R95 5600
L91 1μ
C91 0.047
1
2
3
4
5
13-14
13-14
A
B
C
D
E
F
G
H


IC51 μPC4572G2
IC52 μPC4572G2 (1/2)
AUDIO AMP
IC71 μPC4572G2
IC72 μPC4572G2 (1/2)
AUDIO AMP
IC52 (2/2), IC72 (2/2)
D51 1SS123 (1/2)
D52 1SS123 (1/2)
D71 1SS123 (1/2)
D72 1SS123 (1/2)
D51 1SS123 (2/2)
D52 1SS123 (2/2)
D71 1SS123 (2/2)
D72 1SS123 (2/2)
S1
S2
MIC
LINE
MIC
LINE
L71 8.2μ
L72 8.2μ
L13 47μ
L14 47μ
L91 1μ
A+5V
A-5V
V+5V
Q91 2SC2712
Q92 2SA1162
DC +5V REG
R91 1k
R92 18k
R93 15
R94 15
R95 5600
C91 0.047
C1 47 6.3V
C2 0.022
C3 47 6.3V
C4 0.022
C5 47 6.3V
C6 0.022
AUDIO -5V OUT 10-2 VA-102/P, 11-2
VIDEO +5V OUT 10-1 VA-102/P, 11-1
COMP. VIDEO (X) IN 10-4 VA-102/P, 11-4
VIDEO GND OUT 10-3 VA-102/P, 11-3
AUDIO 2 (X) OUT 7-3 FP, 2-3
AUDIO 2 (G) OUT 7-4 FP, 2-4
AUDIO 1 (X) OUT 7-1 FP, 2-1
AUDIO 1 (G) OUT 7-2 FP, 2-2
COMP. VIDEO (G) OUT 4-1
COMP. VIDEO (X) OUT 4-2
COMP. VIDEO (X) OUT 4-4
COMP. VIDEO (G) OUT 4-3
DC +5V OUT 4-6
DC GND OUT 4-5
AUDIO (X) OUT 4-7
AUDIO (G) OUT 4-8
R45 75 :RN
R46 75 :RN
CN701
CN022 VIDEO OUT (BNC)
CN021 VIDEO OUT (PIN)
CN011 DC 5V OUT
CN031 AUDIO OUT (PIN)
CP-146
1-633-773-11(1)
EVV-9000
EVV-9000P
VA-96
1-633-782-12(1)
EVV-9000
EVV-9000P

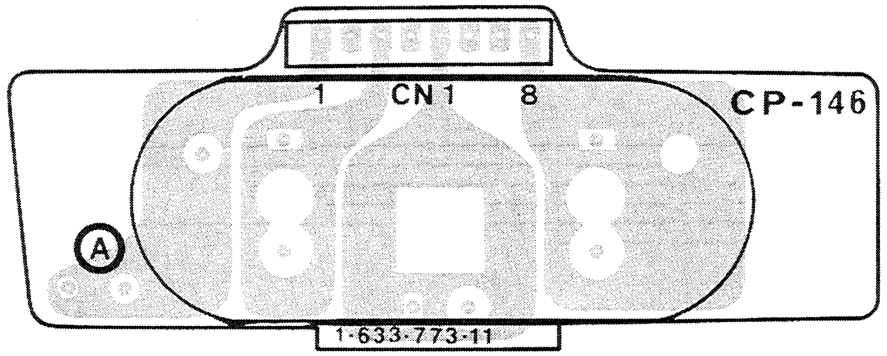
VA-96 ; AUDIO INPUT AMPLIFIER
CP-146 ; CONNECTOR PANEL


A3
A4
1
2
CN5
CN10
6
4
1-633-782-
SONY
JAPAN
A
B
CN4
CN7
C5
C3
C6
C17
C18
L14
IC52
IC51
IC72
IC71
R68
R54
3
CN1
S1
S2
R51
C53
C52
R74
C72
C73
CN2
VA-96

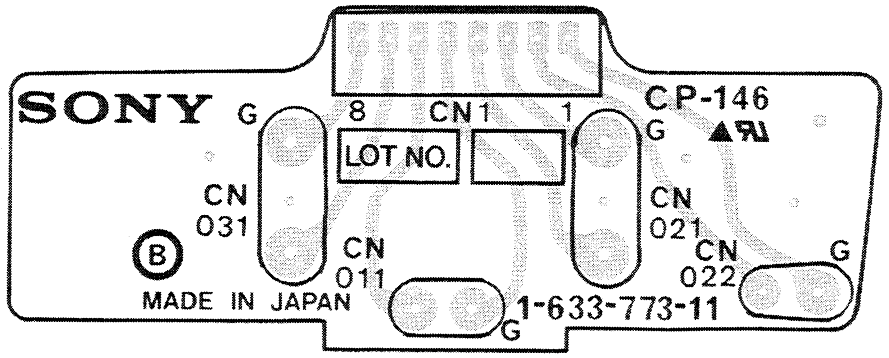
VA-96 -A SIDE-
1-633-782-12 (1)
EVV-9000
EVV-9000P


A4
A3
C2
2
C1
SL2
SL1
CN10
CN5
1
C51
CN1
3
S1
R65
R84
R83
L51
L52
R52
R53
D51
D52
C54
R58
R56
R59
R80
R81
R82
R91
R93
Q92
R92
Q91
R94
R95
C91
R45
R48
L81
C4
L13
C18
C15
A
B
CN4
CN7
C71
R85
S2
R71
R88
L72
R72
R73
D71
R76
D72
L71
R57
C55
C74
R78
R80
R81
R79
R82
R77
C75
R83
R84
CN2
SSE3

VA-96 B SIDE-
1-633-782-12 (1)
EVV-9000
EVV-9000P


1
CN1
8
CP-146
A
1-633-773-11

CP-146 -A SIDE-
1-633-773-11 (1)
EVV-9000
EVV-9000P

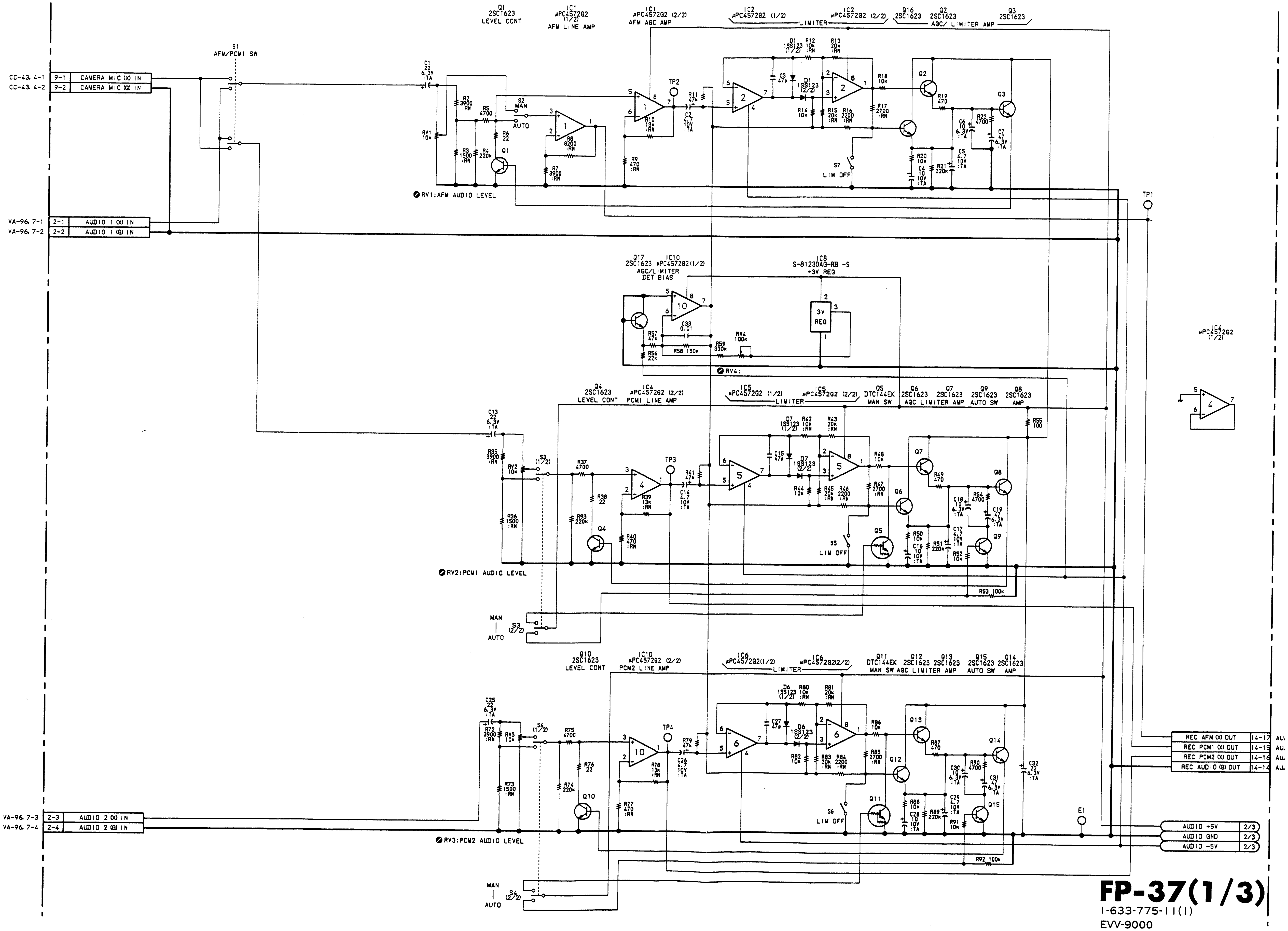

SONY
G
8
CN1
1
CP-146
LOT NO.
CN
031
CN
011
CN
021
CN
022
B
MADE IN JAPAN
1-633-773-11

CP-146 -B SIDE-
1-633-773-11 (1)
EVV-9000
EVV-9000P

A Side is the same as COMPONENT Side

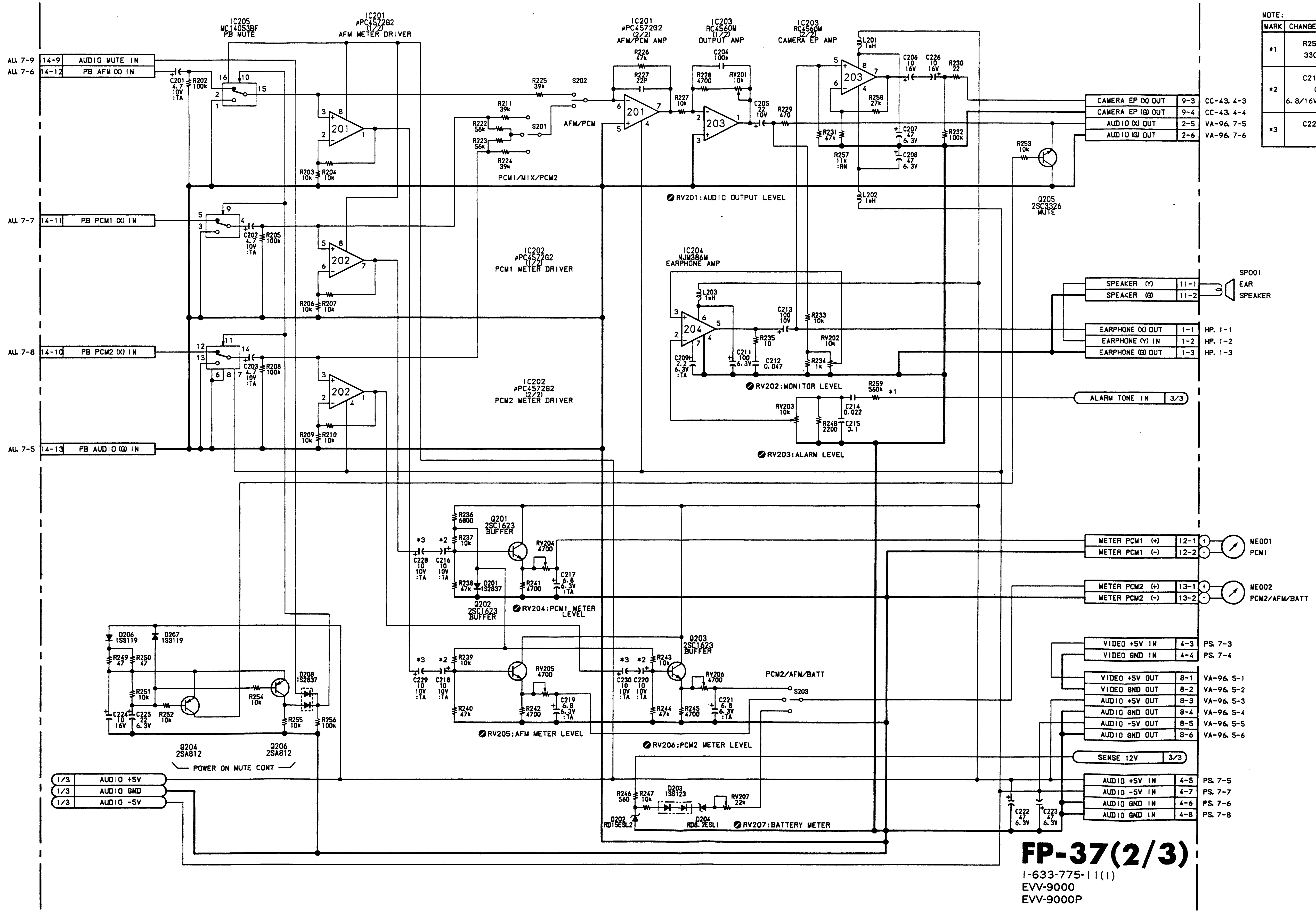
B Side is the same as SOLDER Side

FP-37(1/3) ; AUDIO INPUT AMPLIFIER


CC-43, 4-1 9-1 CAMERA MIC (X) IN
CC-43, 4-2 9-2 CAMERA MIC (G) IN
VA-96, 7-1 2-1 AUDIO 1 (X) IN
VA-96, 7-2 2-2 AUDIO 1 (G) IN
VA-96, 7-3 2-3 AUDIO 2 (X) IN
VA-96, 7-4 2-4 AUDIO 2 (G) IN
S1 AFM/PCM1 SW
Q1 2SC1623 LEVEL CONT
IC1 μPC4572G2 (1/2) AFM LINE AMP
IC1 μPC4572G2 (2/2) AFM AGC AMP
IC2 μPC4572G2 (1/2)
IC2 μPC4572G2 (2/2)
LIMITER
Q16 2SC1623
Q2 2SC1623
Q3 2SC1623
AGC/ LIMITER AMP
RV1:AFM AUDIO LEVEL
S2 MAN AUTO
S7 LIM OFF
TP1
TP2
Q17 2SC1623
IC10 μPC4572G2(1/2)
AGC/LIMITER DET BIAS
IC8 S-81230AG-RB -S +3V REG
3V REG
RV4:
Q4 2SC1623 LEVEL CONT
IC4 μPC4572G2 (2/2) PCM1 LINE AMP
IC5 μPC4572G2 (1/2)
IC5 μPC4572G2 (2/2)
LIMITER
Q5 DTC144EK MAN SW
Q6 2SC1623
Q7 2SC1623
AGC LIMITER AMP
Q9 2SC1623 AUTO SW
Q8 2SC1623 AMP
RV2:PCM1 AUDIO LEVEL
S3 (1/2)
S2 (2/2)
MAN
AUTO
S5 LIM OFF
TP3
R53 100k
IC4 μPC4572G2 (1/2)
Q10 2SC1623 LEVEL CONT
IC10 μPC4572G2 (2/2) PCM2 LINE AMP
IC6 μPC4572G2(1/2)
IC6 μPC4572G2(2/2)
LIMITER
Q11 DTC144EK MAN SW
Q12 2SC1623
Q13 2SC1623
AGC LIMITER AMP
Q15 2SC1623 AUTO SW
Q14 2SC1623 AMP
RV3:PCM2 AUDIO LEVEL
S4 (1/2)
S4 (2/2)
S6 LIM OFF
TP4
E1
R92 100k
REC AFM (X) OUT 14-17 AU, 7-1
REC PCM1 (X) OUT 14-15 AU, 7-3
REC PCM2 (X) OUT 14-16 AU, 7-2
REC AUDIO (G) OUT 14-14 AU, 7-4
AUDIO +5V 2/3
AUDIO GND 2/3
AUDIO -5V 2/3
1
2
3
4
5
A
B
C
D
E
F
G
H

FP-37(1/3)
1-633-775-11(1)
EVV-9000
EVV-9000P

FP-37(2/3); AUDIO OUTPUT AMPLIFIER


1
2
3
4
5
A
B
C
D
E
F
G
H
AU. 7-9
14-9
AUDIO MUTE IN
AU. 7-6
14-12
PB AFM (X) IN
AU. 7-7
14-11
PB PCM1 (X) IN
AU. 7-8
14-10
PB PCM2 (X) IN
AU. 7-5
14-13
PB AUDIO (G) IN
IC205
MC14053BF
PB MUTE
IC201
μPC4572G2
(1/2)
AFM METER DRIVER
IC202
μPC4572G2
(1/2)
PCM1 METER DRIVER
IC202
μPC4572G2
(2/2)
PCM2 METER DRIVER
C201 4.7 10V :TA
R202 100k
C202 4.7 10V :TA
R205 100k
C203 4.7 10V :TA
R208 100k
R203 10k
R204 10k
R206 10k
R207 10k
R209 10k
R210 10k
R225 39k
S202
R211 39k
R222 56k
R223 56k
R224 39k
S201
AFM/PCM
PCM1/MIX/PCM2
IC201
μPC4572G2
(2/2)
AFM/PCM AMP
R226 47k
R227 22P
R227 10k
IC203
RC4560M
(1/2)
OUTPUT AMP
C204 100p
R228 4700
RV201 10k
C205 22 10V
R229 470
RV201:AUDIO OUTPUT LEVEL
IC203
RC4560M
(2/2)
CAMERA EP AMP
L201 1mH
L202 1mH
C206 10 16V
C226 10 16V
R230 22
R258 27k
R231 47k
R257 11k :RN
C207 47 6.3V
C208 47 6.3V
R232 100k
R253 10k
Q205
2SC3326
MUTE
CAMERA EP (X) OUT
9-3
CC-43. 4-3
CAMERA EP (G) OUT
9-4
CC-43. 4-4
AUDIO (X) OUT
2-5
VA-96. 7-5
AUDIO (G) OUT
2-6
VA-96. 7-6
IC204
NJM386M
EARPHONE AMP
L203 1mH
C209 2.2 6.3V :TA
C211 100 6.3V
R235 10
C212 0.047
C213 100 10V
R233 10k
RV202 10k
R234 1k
RV202:MONITOR LEVEL
R259 560k *1
RV203 10k
R248 2200
C214 0.022
C215 0.1
RV203:ALARM LEVEL
ALARM TONE IN
3/3
SPEAKER (Y)
11-1
SPEAKER (G)
11-2
SP001
EAR
SPEAKER
EARPHONE (X) OUT
1-1
HP. 1-1
EARPHONE (Y) IN
1-2
HP. 1-2
EARPHONE (G) OUT
1-3
HP. 1-3
R236 6800
Q201
2SC1623
BUFFER
*3
*2
R237 10k
C228 10 10V :TA
C216 10 10V :TA
RV204 4700
R238 47k
D201 1S2837
R241 4700
C217 6.8 6.3V :TA
Q202
2SC1623
BUFFER
RV204:PCM1 METER LEVEL
R239 10k
C229 10 10V :TA
C218 10 10V :TA
RV205 4700
R240 47k
R242 4700
C219 6.8 6.3V :TA
RV205:AFM METER LEVEL
Q203
2SC1623
BUFFER
R243 10k
C230 10 10V :TA
C220 10 10V :TA
RV206 4700
R244 47k
R245 4700
C221 6.8 6.3V :TA
RV206:PCM2 METER LEVEL
PCM2/AFM/BATT
S203
R246 560
R247 10k
D203 1SS123
RV207 22k
D202 RD15ESL2
D204 RD8.2ESL1
RV207:BATTERY METER
METER PCM1 (+)
12-1
METER PCM1 (-)
12-2
ME001
PCM1
METER PCM2 (+)
13-1
METER PCM2 (-)
13-2
ME002
PCM2/AFM/BATT
VIDEO +5V IN
4-3
PS. 7-3
VIDEO GND IN
4-4
PS. 7-4
VIDEO +5V OUT
8-1
VA-96. 5-1
VIDEO GND OUT
8-2
VA-96. 5-2
AUDIO +5V OUT
8-3
VA-96. 5-3
AUDIO GND OUT
8-4
VA-96. 5-4
AUDIO -5V OUT
8-5
VA-96. 5-5
AUDIO GND OUT
8-6
VA-96. 5-6
SENSE 12V
3/3
AUDIO +5V IN
4-5
PS. 7-5
AUDIO -5V IN
4-7
PS. 7-7
AUDIO GND IN
4-6
PS. 7-6
AUDIO GND IN
4-8
PS. 7-8
C222 47 6.3V
C223 47 6.3V
D206 1SS119
D207 1SS119
R249 47
R250 47
R251 10k
C224 10 16V
C225 22 6.3V
R252 10k
R254 10k
D208 1S2837
R255 10k
R256 100k
Q204 2SA812
Q206 2SA812
POWER ON MUTE CONT
1/3
AUDIO +5V
1/3
AUDIO GND
1/3
AUDIO -5V

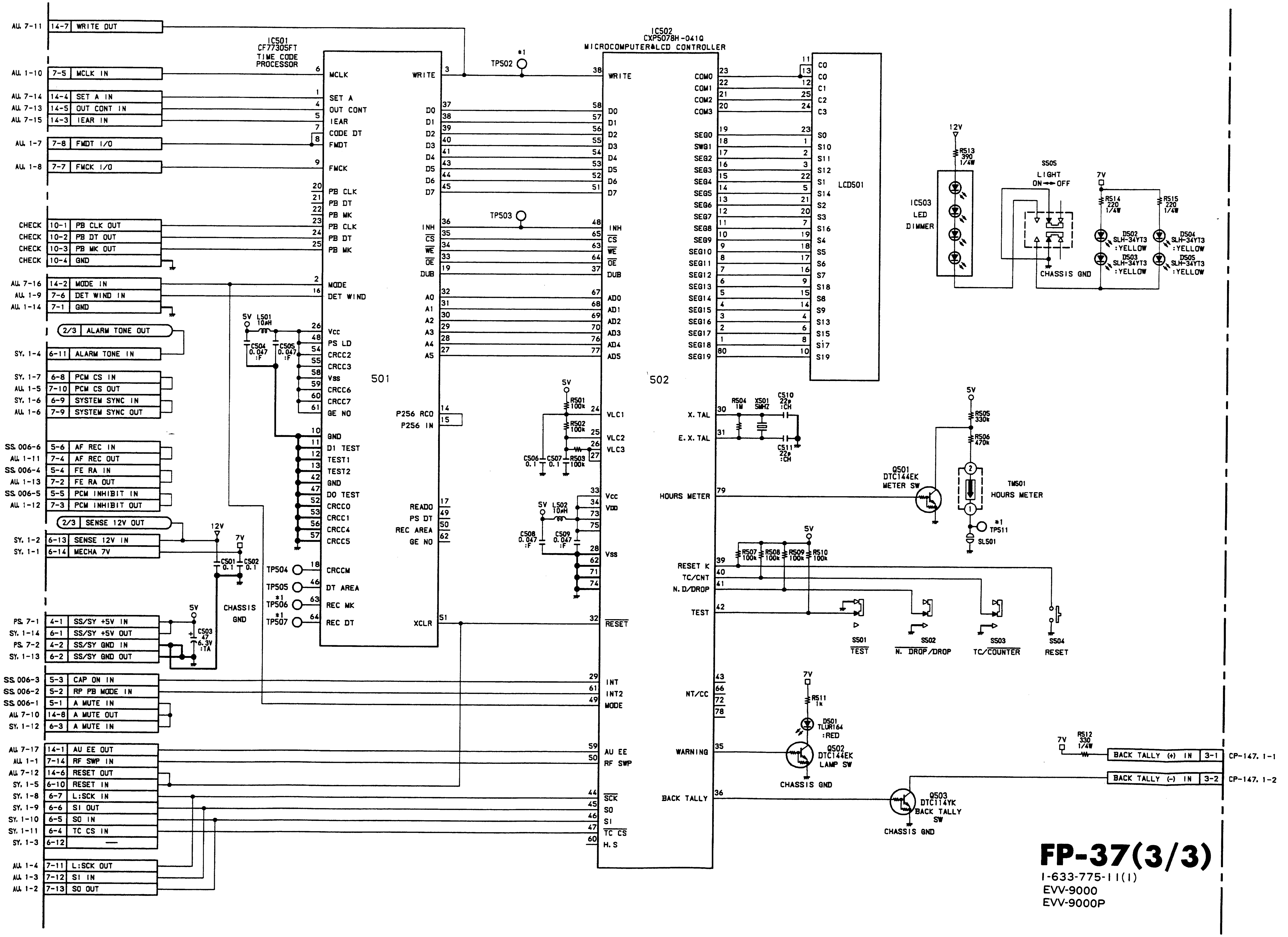
FP-37(2/3)

1-633-775-11(1)
EVV-9000
EVV-9000P

NOTE;

MARK	CHANGE INFORMATION	SERIAL NO
*1	R259 CHANGED 330K → 560K	UC:10951- J:10551- EK:10001-
*2	C216. 218. 220 CHANGED 6.8/16V → 10/10V:TA	UC:10951- J:10551- EK:10101-
*3	C228. 229. 230 ADDED	

FP-37(3/3) ; TIME CODE PROCESS


IC501
CF77305FT
TIME CODE PROCESSOR
501
IC502
CXP5078H-041Q
MICROCOMPUTER&LCD CONTROLLER
502
LCD501
IC503
LED
DIMMER
S505
LIGHT
ON→OFF
CHASSIS GND
D502 SLH-34YT3 :YELLOW
D503 SLH-34YT3 :YELLOW
D504 SLH-34YT3 :YELLOW
D505 SLH-34YT3 :YELLOW
Q501
DTC144EK
METER SW
TM501
HOURS METER
TP511
SL501
S501 TEST
S502 N. DROP/DROP
S503 TC/COUNTER
S504 RESET
D501 TLUR164 :RED
Q502 DTC144EK LAMP SW
Q503 DTC114YK BACK TALLY SW
BACK TALLY (+) IN
BACK TALLY (-) IN
CP-147, 1-1
CP-147, 1-2
WRITE OUT
MCLK IN
SET A IN
OUT CONT IN
IEAR IN
FMDT I/O
FMCK I/O
PB CLK OUT
PB DT OUT
PB MK OUT
GND
MODE IN
DET WIND IN
ALARM TONE OUT
ALARM TONE IN
PCM CS IN
PCM CS OUT
SYSTEM SYNC IN
SYSTEM SYNC OUT
AF REC IN
AF REC OUT
FE RA IN
FE RA OUT
PCM INHIBIT IN
PCM INHIBIT OUT
SENSE 12V OUT
SENSE 12V IN
MECHA 7V
SS/SY +5V IN
SS/SY +5V OUT
SS/SY GND IN
SS/SY GND OUT
CAP ON IN
RP PB MODE IN
A MUTE IN
A MUTE OUT
AU EE OUT
RF SWP IN
RESET OUT
RESET IN
L:SCK IN
SI OUT
SO IN
TC CS IN
L:SCK OUT
SI IN
SO OUT
TP502
TP503
TP504
TP505
TP506
TP507
HOURS METER
RESET K
TC/CNT
N.D/DROP
TEST
NT/CC
WARNING
BACK TALLY
X.TAL
E.X.TAL
A
B
C
D
E
F
G
H
1
2
3
4
5

NOTE:

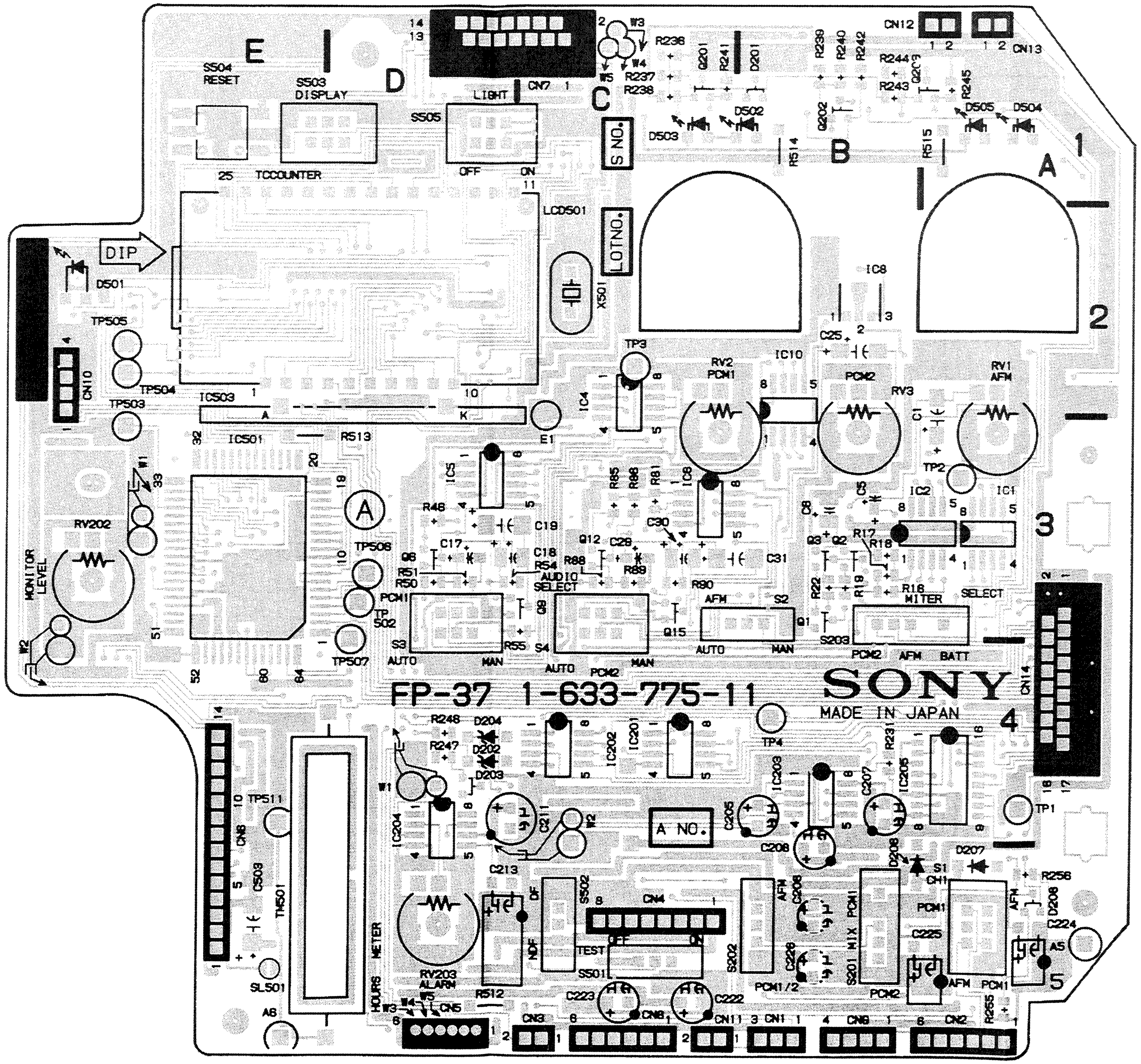
MARK	CHANGE INFORMATION	SERIAL NO
*1	TP502, 506, 507, 511 DELETED	UC:10951- J:10551- EK:10001-

FP-37(3/3)
1-633-775-11(1)
EVV-9000
EVV-9000P

FP-37; AUDIO INPUT/OUTPUT AMPLIFIER TIME CODE PROCESS

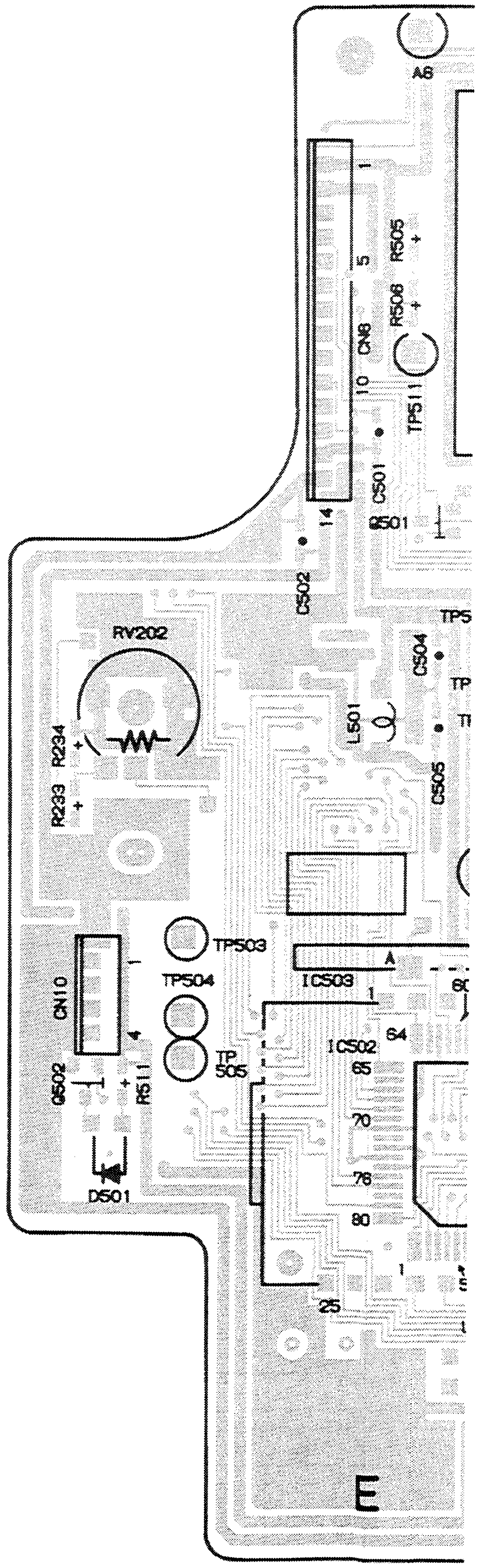
FP-37(1-633-775-11) A SIDE	
D201	B-1
D202	D-4
D203	D-4
D204	D-4
D206	B-5
D207	A-5
D208	A-5
D501	E-2
D502	B-1
D503	C-1
D504	A-1
D505	A-1
IC1	A-3
IC2	B-3
IC4	C-2
IC5	D-3
IC6	C-3
IC8	B-2
IC10	B-2
IC201	C-4
IC202	C-4
IC203	B-4
IC204	D-4
IC205	B-4
IC501	E-3
IC503	E-2
LCD501	C-2
Q1	B-3
Q2	B-3
Q3	B-3
Q6	D-3
Q9	C-3
Q12	C-3
Q15	C-3
Q201	C-1
Q202	B-1
Q203	B-1
RV1	A-2
RV2	C-2
RV3	B-2
RV202	E-3
RV203	D-5
S1	A-5
S2	B-3
S3	D-4
S4	C-4
S201	B-5
S202	B-5
S203	B-3
S501	C-5
S502	C-5
S503	E-1
S504	E-1
S505	D-1
TM501	E-5
X501	C-2

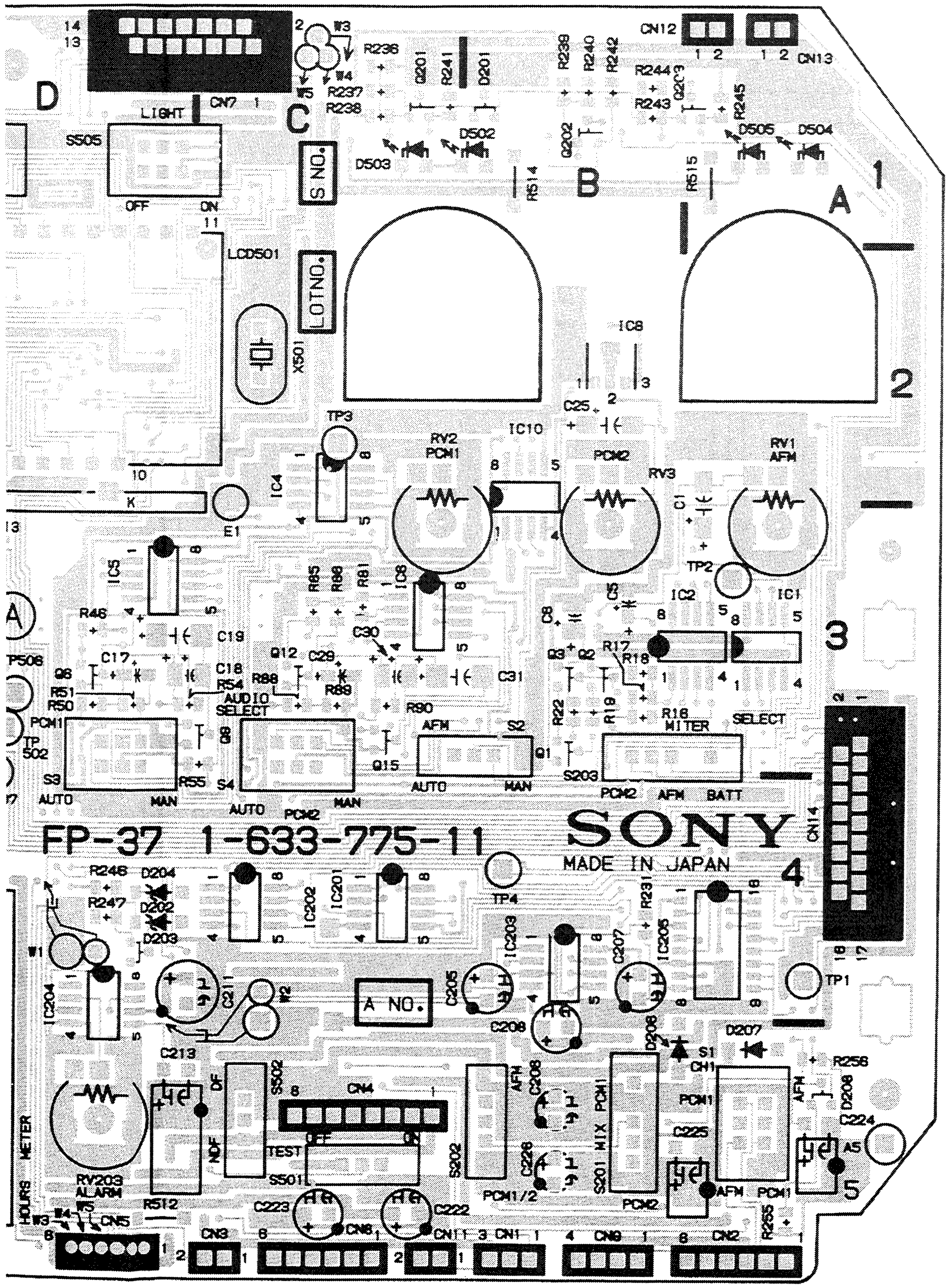
FP-37(1-633-775-11) B SIDE	
CN1	B-5
CN2	A-5
CN3	C-5
CN4	C-5
CN5	D-5
CN6	E-4
CN7	D-1
CN8	C-5
CN9	B-5
CN10	E-2
CN11	C-5
CN12	B-1
CN13	A-1
CN14	A-4
D1	B-3
D6	C-3
D7	D-3
E1	C-3
IC502	E-2
Q4	D-3
Q5	D-3
Q7	D-3
Q8	C-3
Q10	C-3
Q11	C-3
Q13	C-3
Q14	C-3
Q16	B-3
Q17	B-2
Q204	A-5
Q205	A-5
Q206	A-5
Q501	E-4
Q502	E-2
Q503	C-2
RV4	B-1
RV201	C-4
RV204	C-1
RV205	B-1
RV206	A-1
RV207	D-4
S5	D-3
S6	C-3
S7	A-4
TP1	A-4
TP2	A-3
TP3	C-2
TP4	B-4
TP503	E-3
TP504	E-2
TP505	E-2
TP506	E-3
TP507	E-4
TP511	E-4


E
D
C
B
A
1
2
3
4
5
S504 RESET
S503 DISPLAY
S505
LIGHT
OFF ON
CN7
S NO.
LOT NO.
LCD501
X501
TC COUNTER
DIP
D501
TP505
TP504
TP503
CN10
IC503
IC501
R513
E1
RV202
MONITOR LEVEL
TP506
TP502
TP507
S3 AUTO MAN
S4 AUTO MAN
AUDIO SELECT
PCM1
PCM2
RV2 PCM1
RV3
RV1 AFM
IC10
IC8
IC4
IC5
IC6
IC2
IC1
TP2
TP3
S2 AFM AUTO MAN
S203 PCM2 AFM BATT
SELECT
METER
R16
R17
R18
R19
Q1
Q2
Q3
Q15
CN12
CN13
CN14
D502
D503
D504
D505
R236
R237
R238
R239
R240
R241
R242
R243
R244
R245
Q201
Q202
Q203
D201
R514
R515
FP-37 1-633-775-11
SONY
MADE IN JAPAN
R248
R247
D204
D202
D203
IC201
IC202
IC203
IC204
IC205
TP4
TP1
A NO.
C205
C207
C208
C211
C213
D207
D208
S1 CH1
R256
C224
C225
C226
C222
C223
A5
A6
TP511
CN6
C503
TM501
SL501
RV203 ALARM
HOURS METER
R512
NDF
DF
S502
S501
TEST
CN4
S202
S201 MIX PCM1
PCM1/2
AFM PCM1
R265
CN5
CN3
CN8
CN11
CN1
CN9
CN2

FP-37 A SIDE
1-633-775-11 (1)
EVV-9000
EVV-9000P

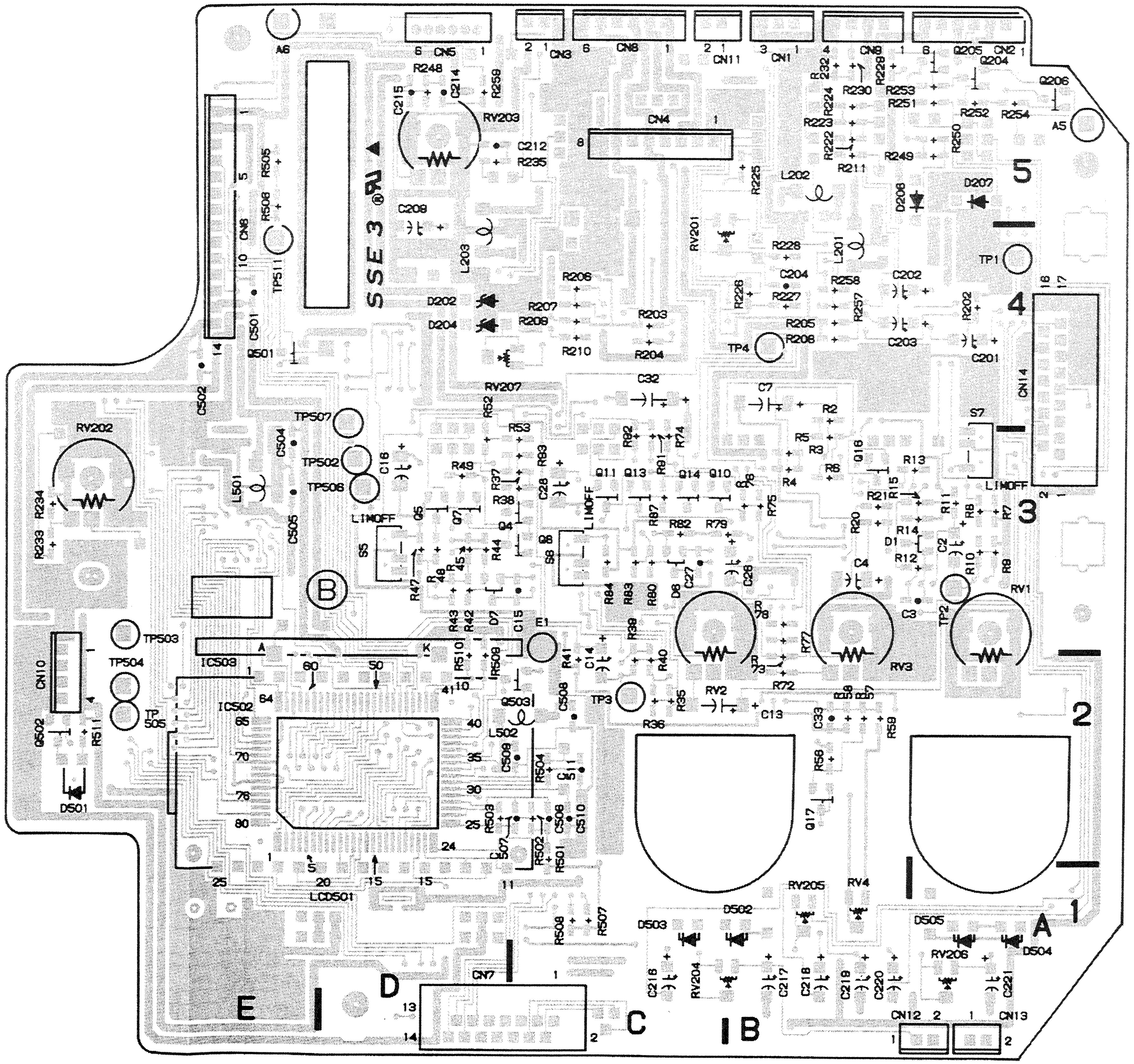
A Side is the same as COMPONENT Side


A6
CN6
R505
R506
TP511
C501
Q501
RV202
C502
C504
R233
R234
L501
C505
TP503
TP504
TP505
CN10
IC503
IC502
Q502
R511
D501
E


FP-37 1-633-775-11
SONY
MADE IN JAPAN
LIGHT
CN7
S505
OFF
ON
LCD501
X501
S NO.
LOTNO.
IC8
IC10
RV2 PCM1
RV1 AFM
RV3
IC4
IC5
IC3
IC2
IC1
TP3
TP2
TP4
TP1
E1
AUDIO SELECT
AFM
S2
S3
S4
AUTO
MAN
PCM2
AFM
BATT
MITER
SELECT
S203
CN14
IC202
IC201
IC203
IC205
IC204
A NO.
RV203 ALARM
HOURS METER
CN4
S502
S501
TEST
S202
S201 MIX PCM1
PCM1/2
PCM2
AFM
PCM1
S1 CH1
CN5
CN3
CN6
CN11
CN1
CN9
CN2
CN12
CN13
A5
A
B
C
D
1
2
3
4
5

FP-37 A SIDE
1-633-775-11 (1)
EVV-9000
EVV-9000P

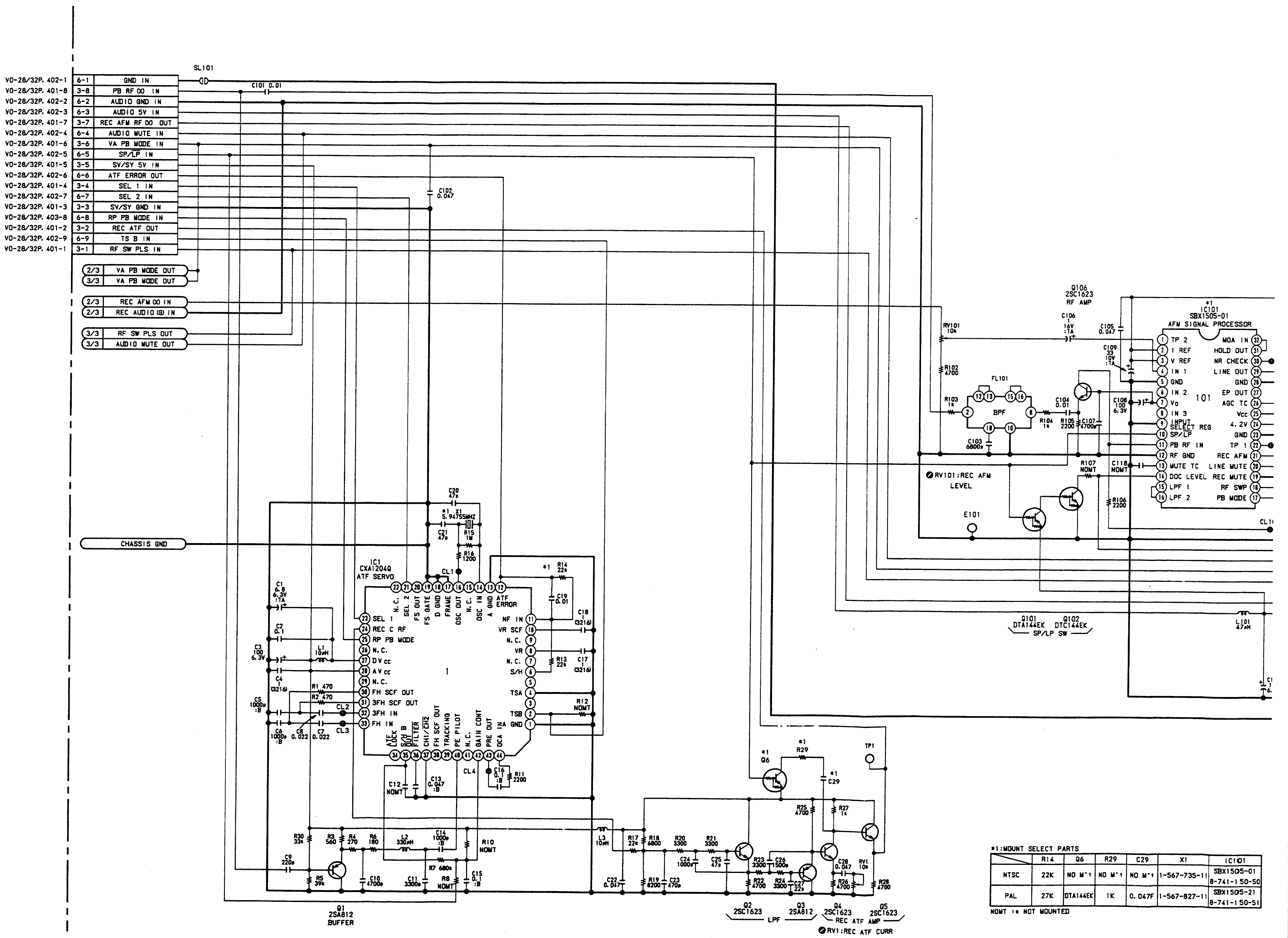
A Side is the same as COMPONENT Side


CN5
CN3
CN8
CN11
CN1
CN9
CN2
CN4
CN6
CN10
CN14
CN7
CN12
CN13
SSE 3
RV203
RV201
RV207
RV202
RV2
RV3
RV1
RV205
RV4
RV204
RV206
L202
L201
L203
L501
L502
IC503
IC502
LCD501
TP511
TP507
TP502
TP506
TP503
TP504
TP505
TP4
TP3
TP2
TP1
LIMOFF
S5
S8
S7
E1
A5
A6
A
B
C
D
E
1
2
3
4
5

FP-37 B SIDE
1-633-775-11 (1)
EVV-9000
EVV-9000P

B Side is the same as SOLDER Side

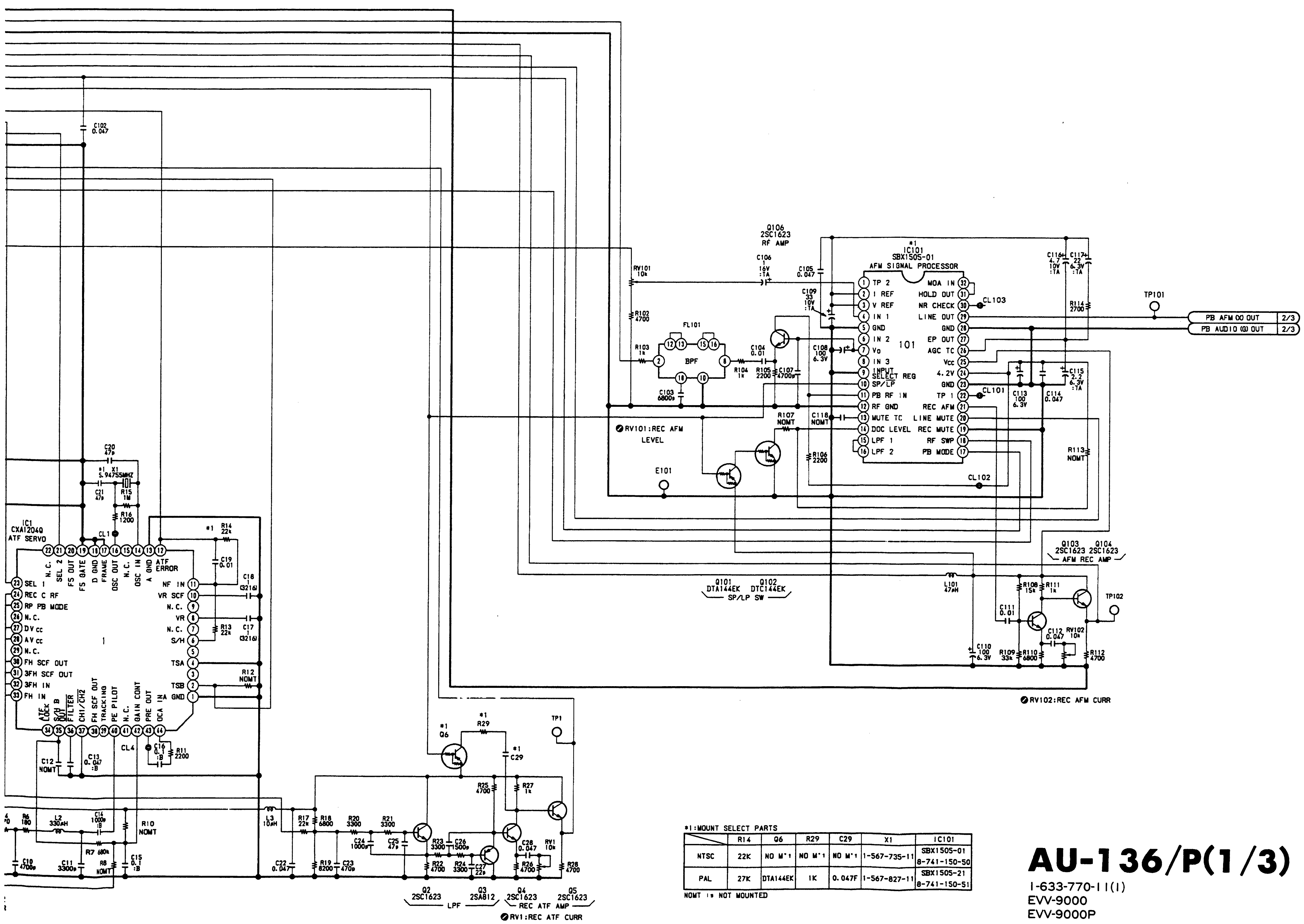
AU-136P(1/3); AFM SIGNAL PROCESS/ATF SERVO


VO-28/32P. 402-1 6-1 GND IN
VO-28/32P. 401-8 3-8 PB RF (X) IN
VO-28/32P. 402-2 6-2 AUDIO GND IN
VO-28/32P. 402-3 6-3 AUDIO 5V IN
VO-28/32P. 401-7 3-7 REC AFM RF (X) OUT
VO-28/32P. 402-4 6-4 AUDIO MUTE IN
VO-28/32P. 401-6 3-6 VA PB MODE IN
VO-28/32P. 402-5 6-5 SP/LP IN
VO-28/32P. 401-5 3-5 SV/SY 5V IN
VO-28/32P. 402-6 6-6 ATF ERROR OUT
VO-28/32P. 401-4 3-4 SEL 1 IN
VO-28/32P. 402-7 6-7 SEL 2 IN
VO-28/32P. 401-3 3-3 SV/SY GND IN
VO-28/32P. 403-8 6-8 RP PB MODE IN
VO-28/32P. 401-2 3-2 REC ATF OUT
VO-28/32P. 402-9 6-9 TS B IN
VO-28/32P. 401-1 3-1 RF SW PLS IN
2/3 VA PB MODE OUT
3/3 VA PB MODE OUT
2/3 REC AFM (X) IN
2/3 REC AUDIO (G) IN
3/3 RF SW PLS OUT
3/3 AUDIO MUTE OUT
CHASSIS GND
SL101
C101 0.01
C102 0.047
IC1 CXA1204Q ATF SERVO
X1 5.9475MHZ
Q106 2SC1623 RF AMP
IC101 SBX1505-01 AFM SIGNAL PROCESSOR
RV101 10k
FL101 BPF
RV101:REC AFM LEVEL
E101
Q101 DTA144EK Q102 DTC144EK SP/LP SW
L101 47μH
Q1 2SA812 BUFFER
Q2 2SC1623 Q3 2SA812 LPF
Q4 2SC1623 Q5 2SC1623 REC ATF AMP
RV1:REC ATF CURR
TP1
CL1
CL2
CL3
CL4

*1:MOUNT SELECT PARTS

	R14	Q6	R29	C29	X1	IC101
NTSC	22K	NO M'1	NO M'1	NO M'1	1-567-735-11	SBX1505-01 8-741-150-50
PAL	27K	DTA144EK	1K	0.047F	1-567-827-11	SBX1505-21 8-741-150-51

NOMT is NOT MOUNTED


C102
0.047
IC1
CXA1204Q
ATF SERVO
C20 47p
*1 X1 5.94755MHZ
C21 47p
R15 1M
R16 1200
CL1
*1 R14 22k
C19 0.01
C18 1 (3216)
C17 1 (3216)
R13 22k
R12 NOMT
N.C.
SEL 2
FS OUT
FS GATE
D GND
FRAME
OSC OUT
N.C.
OSC IN
A GND
ATF ERROR
SEL 1
REC C RF
RP PB MODE
N.C.
DV cc
AV cc
N.C.
FH SCF OUT
3FH SCF OUT
3FH IN
FH IN
NF IN
VR SCF
N.C.
VR
N.C.
S/H
TSA
TSB
A GND
ATF LOCK
S/H B OUT
FILTER
CH1/CH2
FH SCF OUT
TRACKING
PE PILOT
N.C.
GAIN CONT
PRE OUT
OCA IN
CL4
C12 NOMT
C13 0.047 :B
C16 0.1 :B
R11 2200
R6 180
L2 330µH
C14 1000p :B
R10 NOMT
R7 680k
R8 NOMT
C19 4700p
C11 3300p
C15 0.1 :B
L3 10µH
C22 0.047
R17 22k
R18 6800
R19 8200
C23 470p
R20 3300
R21 3300
C24 1000p
C25 47p
R22 4700
R23 3300
C26 1500p
R24 3300
C27 22p
R25 4700
R26 4700
R27 1k
R28 4700
C28 0.047
RV1 10k
*1 Q6
*1 R29
*1 C29
TP1
Q2 2SC1623
Q3 2SA812
LPF
Q4 2SC1623
Q5 2SC1623
REC ATF AMP
RV1:REC ATF CURR
Q106
2SC1623
RF AMP
RV101 10k
R102 4700
R103 1k
FL101
BPF
C103 6800p
C104 0.01
R104 1k
R105 2200
C107 4700p
C106 1 16V :TA
C105 0.047
C109 33 10V :TA
C108 100 6.3V
RV101:REC AFM LEVEL
E101
R107 NOMT
C118 NOMT
R106 2200
Q101 DTA144EK
Q102 DTC144EK
SP/LP SW
*1
IC101
SBX1505-01
AFM SIGNAL PROCESSOR
TP 2
I REF
V REF
IN 1
GND
IN 2
Vo
IN 3
INPUT SELECT REG
SP/LP
PB RF IN
RF GND
MUTE TC
DOC LEVEL
LPF 1
LPF 2
MOA IN
HOLD OUT
NR CHECK
LINE OUT
GND
EP OUT
AGC TC
Vcc
4.2V
GND
TP 1
REC AFM
LINE MUTE
REC MUTE
RF SWP
PB MODE
101
CL103
CL101
CL102
C116 4.7 10V :TA
C117 22 6.3V :TA
R114 2700
C113 100 6.3V
C114 0.047
C115 2.2 6.3V :TA
R113 NOMT
TP101
PB AFM (X) OUT 2/3
PB AUDIO (G) OUT 2/3
Q103 2SC1623
Q104 2SC1623
AFM REC AMP
L101 47µH
R108 15k
R111 1k
TP102
C111 0.01
C112 0.047
RV102 10k
C110 100 6.3V
R109 33k
R110 6800
R112 4700
RV102:REC AFM CURR

*1:MOUNT SELECT PARTS

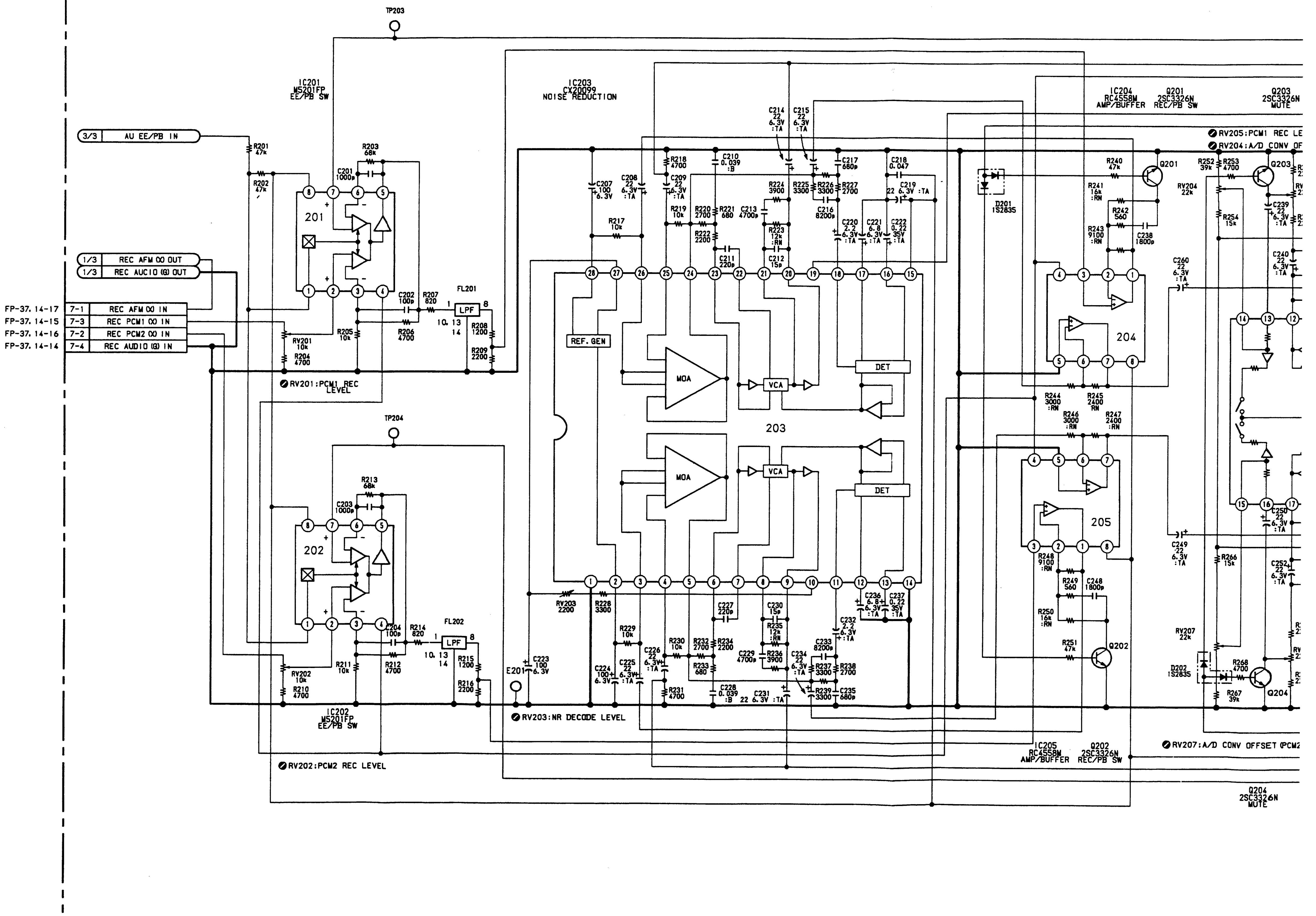
	R14	Q6	R29	C29	X1	IC101
NTSC	22K	NO M'1	NO M'1	NO M'1	1-567-735-11	SBX1505-01 8-741-150-50
PAL	27K	DTA144EK	1K	0.047F	1-567-827-11	SBX1505-21 8-741-150-51

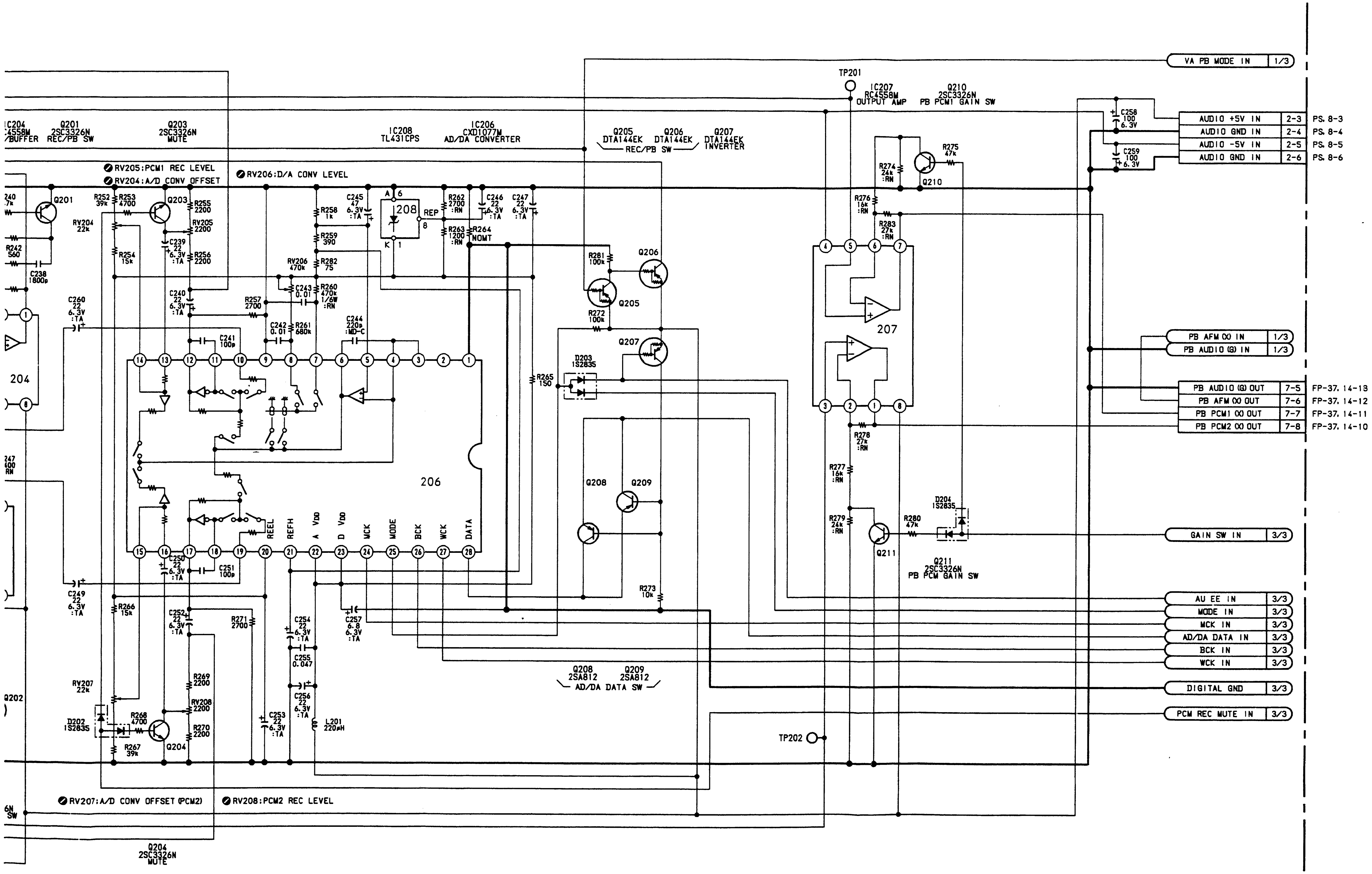
NOMT is NOT MOUNTED

AU-136/P(1/3)

1-633-770-11(1)
EVV-9000
EVV-9000P

AU-136P(2/3) ; PCM AUDIO PROCESS (ANALOG)

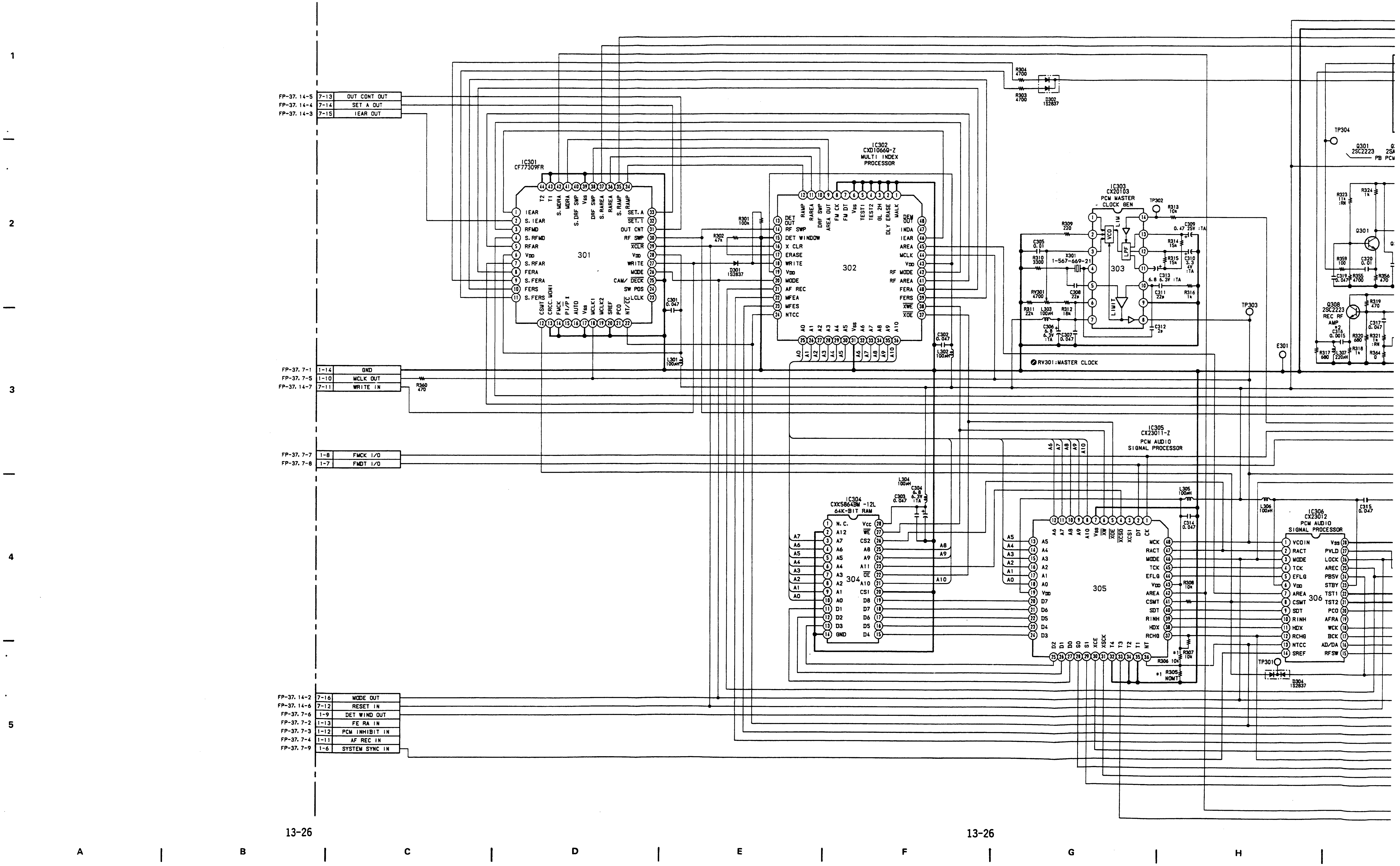

TP203
TP204
IC201
M5201FP
EE/PB SW
IC202
M5201FP
EE/PB SW
IC203
CX20099
NOISE REDUCTION
IC204
RC4558M
AMP/BUFFER
Q201
2SC3326N
REC/PB SW
Q203
2SC3326N
MUTE
IC205
RC4558M
AMP/BUFFER
Q202
2SC3326N
REC/PB SW
Q204
2SC3326N
MUTE
3/3 AU EE/PB IN
1/3 REC AFM (I) OUT
1/3 REC AUDIO (G) OUT
FP-37, 14-17 7-1 REC AFM (I) IN
FP-37, 14-15 7-3 REC PCM1 (I) IN
FP-37, 14-16 7-2 REC PCM2 (I) IN
FP-37, 14-14 7-4 REC AUDIO (G) IN
201
202
203
204
205
REF. GEN
MOA
VCA
DET
LPF
FL201
FL202
D201
1S2835
D202
1S2835
E201
RV201:PCM1 REC LEVEL
RV202:PCM2 REC LEVEL
RV203:NR DECODE LEVEL
RV205:PCM1 REC LE
RV204:A/D CONV OF
RV207:A/D CONV OFFSET (PCM2
R201 47k
R202 47k
R203 68k
R204 4700
R205 10k
R206 4700
R207 820
R208 1200
R209 2200
R210 4700
R211 10k
R212 4700
R213 68k
R214 820
R215 1200
R216 2200
R217 10k
R218 4700
R219 10k
R220 2700
R221 680
R222 2200
R223 12k :RN
R224 3900
R225 3300
R226 3300
R227 2700
R228 3300
R229 10k
R230 10k
R231 4700
R232 2700
R233 680
R234 2200
R235 12k :RN
R236 3900
R237 3300
R238 2700
R239 3300
R240 47k
R241 16k :RN
R242 560
R243 9100 :RN
R244 3000 :RN
R245 2400 RN
R246 3000 :RN
R247 2400 :RN
R248 9100 :RN
R249 560
R250 16k :RN
R251 47k
R252 39k
R253 4700
R254 15k
R266 15k
R267 39k
R268 4700
RV201 10k
RV202 10k
RV203 2200
RV204 22k
RV207 22k
C201 1000p
C202 100p
C203 1000p
C204 100p
C207 100 6.3V
C208 22 6.3V :TA
C209 22 6.3V :TA
C210 0.039 :B
C211 220p
C212 15p
C213 4700p
C214 22 6.3V :TA
C215 22 6.3V :TA
C216 8200p
C217 680p
C218 0.047
C219 22 6.3V :TA
C220 2.2 6.3V :TA
C221 6.8 6.3V :TA
C222 0.22 35V :TA
C223 100 6.3V
C224 100 6.3V
C225 22 6.3V :TA
C226 22 6.3V :TA
C227 220p
C228 0.039 :B
C229 4700p
C230 15p
C231 22 6.3V :TA
C232 2.2 6.3V :TA
C233 8200p
C234 22 6.3V :TA
C235 680p
C236 6.8 6.3V :TA
C237 0.22 35V :TA
C238 1800p
C239 22 6.3V :TA
C240 22 6.3V :TA
C248 1800p
C249 22 6.3V :TA
C250 22 6.3V :TA
C252 22 6.3V :TA
C260 22 6.3V :TA

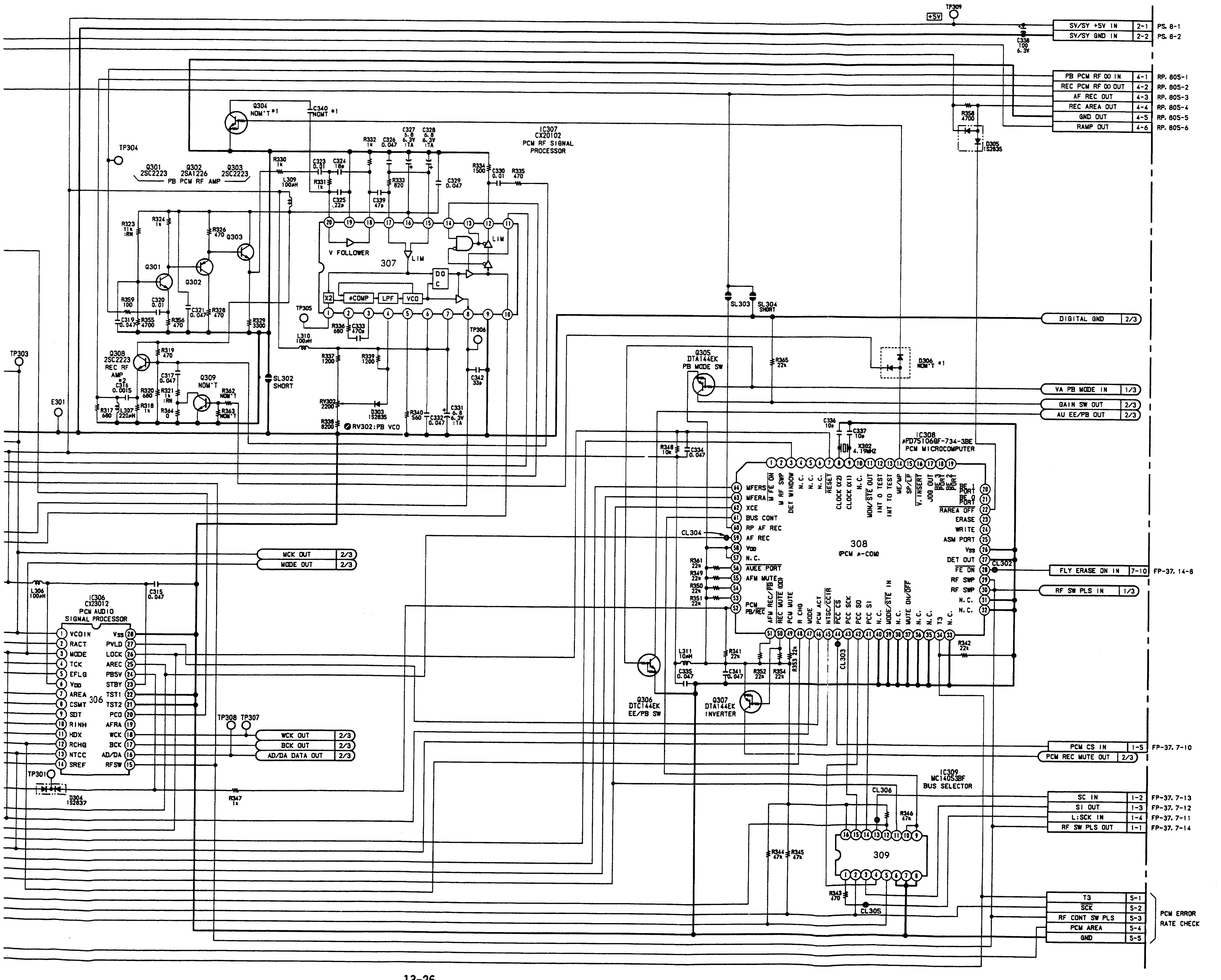

VA PB MODE IN 1/3
TP201
IC207 RC4558M OUTPUT AMP
Q210 2SC3326N PB PCM1 GAIN SW
IC204 4558M BUFFER
Q201 2SC3326N REC/PB SW
Q203 2SC3326N MUTE
IC208 TL431CPS
IC206 CXD1077M AD/DA CONVERTER
Q205 DTA144EK
Q206 DTA144EK
REC/PB SW
Q207 DTA144EK INVERTER
AUDIO +5V IN 2-3 PS. 8-3
AUDIO GND IN 2-4 PS. 8-4
AUDIO -5V IN 2-5 PS. 8-5
AUDIO GND IN 2-6 PS. 8-6
C258 100 6.3V
C259 100 6.3V
RV205:PCM1 REC LEVEL
RV204:A/D CONV OFFSET
RV206:D/A CONV LEVEL
R275 47k
R274 24k :RN
Q210
R276 16k :RN
R283 27k :RN
Q201
Q203
R252 39k
R253 4700
R255 2200
RV205 2200
RV204 22k
R254 15k
C239 22 6.3V :TA
R256 2200
R242 560
C238 1800p
C260 22 6.3V :TA
C240 22 6.3V :TA
R257 2700
C241 100p
C245 47 6.3V :TA
R258 1k
R259 390
RV206 470k
R282 75
C243 0.01
R260 470k 1/6W :RN
C242 0.01
R261 680k
C244 220p :MD-C
208
REP
R262 2700 :RN
R263 1200 :RN
R264 NOMT
C246 22 6.3V :TA
C247 22 6.3V :TA
R281 100k
Q206
Q205
R272 100k
Q207
D203 1S2835
R265 150
207
PB AFM CH IN 1/3
PB AUDIO (G) IN 1/3
PB AUDIO (G) OUT 7-5 FP-37, 14-13
PB AFM CH OUT 7-6 FP-37, 14-12
PB PCM1 CH OUT 7-7 FP-37, 14-11
PB PCM2 CH OUT 7-8 FP-37, 14-10
R278 27k :RN
R277 16k :RN
204
206
Q208
Q209
D204 1S2835
R279 24k :RN
R280 47k
Q211
GAIN SW IN 3/3
Q211 2SC3326N PB PCM GAIN SW
REEL
REFH
A VDD
D VDD
MCK
MODE
BCK
WCK
DATA
C250 22 6.3V :TA
C251 100p
C249 22 6.3V :TA
R266 15k
C252 22 6.3V :TA
R271 2700
C254 22 6.3V :TA
C257 6.8 6.3V :TA
C255 0.047
R273 10k
AU EE IN 3/3
MODE IN 3/3
MCK IN 3/3
AD/DA DATA IN 3/3
BCK IN 3/3
WCK IN 3/3
Q208 2SA812
Q209 2SA812
AD/DA DATA SW
DIGITAL GND 3/3
PCM REC MUTE IN 3/3
Q202
RV207 22k
D202 1S2835
R268 4700
R267 39k
Q204
R269 2200
RV208 2200
R270 2200
C253 22 6.3V :TA
C256 22 6.3V :TA
L201 220µH
TP202
RV207:A/D CONV OFFSET (PCM2)
RV208:PCM2 REC LEVEL
Q204 2SC3326N MUTE

AU-136/P(2/3)

1-633-770-11(1)
EVV-9000
EVV-9000P

AU-136P(3/3); PCM AUDIO PROCESS (DIGITAL)


FP-37, 14-5 7-13 OUT CONT OUT
FP-37, 14-4 7-14 SET A OUT
FP-37, 14-3 7-15 IEAR OUT
FP-37, 7-1 1-14 GND
FP-37, 7-5 1-10 MCLK OUT
FP-37, 14-7 7-11 WRITE IN
FP-37, 7-7 1-8 FMCK I/O
FP-37, 7-8 1-7 FMDT I/O
FP-37, 14-2 7-16 MODE OUT
FP-37, 14-6 7-12 RESET IN
FP-37, 7-6 1-9 DET WIND OUT
FP-37, 7-2 1-13 FE RA IN
FP-37, 7-3 1-12 PCM INHIBIT IN
FP-37, 7-4 1-11 AF REC IN
FP-37, 7-9 1-6 SYSTEM SYNC IN
IC301 CF77309FR
IC302 CXD1066Q-Z MULTI INDEX PROCESSOR
IC303 CX20103 PCM MASTER CLOCK GEN
IC304 CXK5864BM -12L 64K-BIT RAM
IC305 CX23011-Z PCM AUDIO SIGNAL PROCESSOR
IC306 CX23012 PCM AUDIO SIGNAL PROCESSOR
Q301 2SC2223 PB PCM
Q308 2SC2223 REC RF AMP
D301 1S2837
D302 1S2837
D304 1S2837
X301 1-567-669-21
RV301:MASTER CLOCK
TP301 TP302 TP303 TP304 E301
1 2 3 4 5
A B C D E F G H


+5V
TP309
SV/SY +5V IN 2-1 PS. 8-1
SV/SY GND IN 2-2 PS. 8-2
C338 100 6.3V
PB PCM RF 00 IN 4-1 RP. 805-1
REC PCM RF 00 OUT 4-2 RP. 805-2
AF REC OUT 4-3 RP. 805-3
REC AREA OUT 4-4 RP. 805-4
GND OUT 4-5 RP. 805-5
RAMP OUT 4-6 RP. 805-6
R358 4700
D305 1S2835
Q304 NOM'T *1
C340 NOMT *1
TP304
Q301 2SC2223
Q302 2SA1226
Q303 2SC2223
PB PCM RF AMP
IC307 CX20102 PCM RF SIGNAL PROCESSOR
V FOLLOWER
LIM
307
DO C
X2
ΦCOMP
LPF
VCO
TP305
TP306
L309 100μH
L310 100μH
SL302 SHORT
SL303
SL304 SHORT
DIGITAL GND 2/3
Q308 2SC2223 REC RF AMP
Q309 NOM'T
*2 C316 0.0015
R362 NOM'T
R363 NOM'T
TP303
E301
RV302 2200
RV302:PB VCO
D303 1S2835
D306 NOM'T *1
Q305 DTA144EK PB MODE SW
VA PB MODE IN 1/3
GAIN SW OUT 2/3
AU EE/PB OUT 2/3
IC308 μPD75106GF-734-3BE PCM MICROCOMPUTER
X302 4.19MHz
308 (PCM μ-COM)
M FE ON
M RF SWP
DET WINDOW
N.C.
RESET
CLOCK (X2)
CLOCK (X1)
MON/STE OUT
INT 0 TEST
INT 1 TEST
ME/SP
SP/LP
V. INSERT
JOG OUT
BE 2 PORT
BE 1 PORT
BE 0 PORT
RAREA OFF
ERASE
WRITE
ASM PORT
Vss
DET OUT
FE ON
RF SWP
MFERS
MFERA
XCE
BUS CONT
RP AF REC
AF REC
VDD
AVEE PORT
AFM MUTE
PCM PB/REC
AFM REC/PB
REC MUTE (DD)
PCM MUTE
WINDOW
R CHG
MODE
PCM ACT
NTSC/CCIR
PCC CS
PCC SCK
PCC SO
PCC SI
MODE/STE IN
MUTE ON/OFF
T3
CL302
CL303
CL304
FLY ERASE ON IN 7-10 FP-37. 14-8
RF SW PLS IN 1/3
MCK OUT 2/3
MODE OUT 2/3
L306 100μH
IC306 CX23012 PCM AUDIO SIGNAL PROCESSOR
306
VCOIN
RACT
MODE
TCK
EFLG
VDD
AREA
CSMT
SDT
RINH
HDX
RCHG
NTCC
SREF
Vss
PVLD
LOCK
AREC
PBSV
STBY
TST1
TST2
PCO
AFRA
WCK
BCK
AD/DA
RFSW
TP308
TP307
WCK OUT 2/3
BCK OUT 2/3
AD/DA DATA OUT 2/3
TP301
D304 1S2837
R347 1k
Q306 DTC144EK EE/PB SW
Q307 DTA144EK INVERTER
L311 10μH
PCM CS IN 1-5 FP-37. 7-10
PCM REC MUTE OUT 2/3
IC309 MC14053BF BUS SELECTOR
309
CL305
CL306
SC IN 1-2 FP-37. 7-13
SI OUT 1-3 FP-37. 7-12
L:SCK IN 1-4 FP-37. 7-11
RF SW PLS OUT 1-1 FP-37. 7-14
T3 5-1
SCK 5-2
RF CONT SW PLS 5-3
PCM AREA 5-4
GND 5-5
PCM ERROR RATE CHECK
H I J K L M N O P

*1:MOUNT SELECT PARTS

	NTSC	PAL
D306	NOMT	1S2835
Q304	NOMT	DTC144EK
C340	NOMT	22P
R305	NOMT	0
R306	10K	NOMT

NOMT IS NOT MOUNTED

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO
*2	C316 CHANGED 470P → 0.0015	UC:10951- J:10551- EK:10001-

AU-136/P(3/3)

1-633-770-11(1)
EVV-9000
EVV-9000P

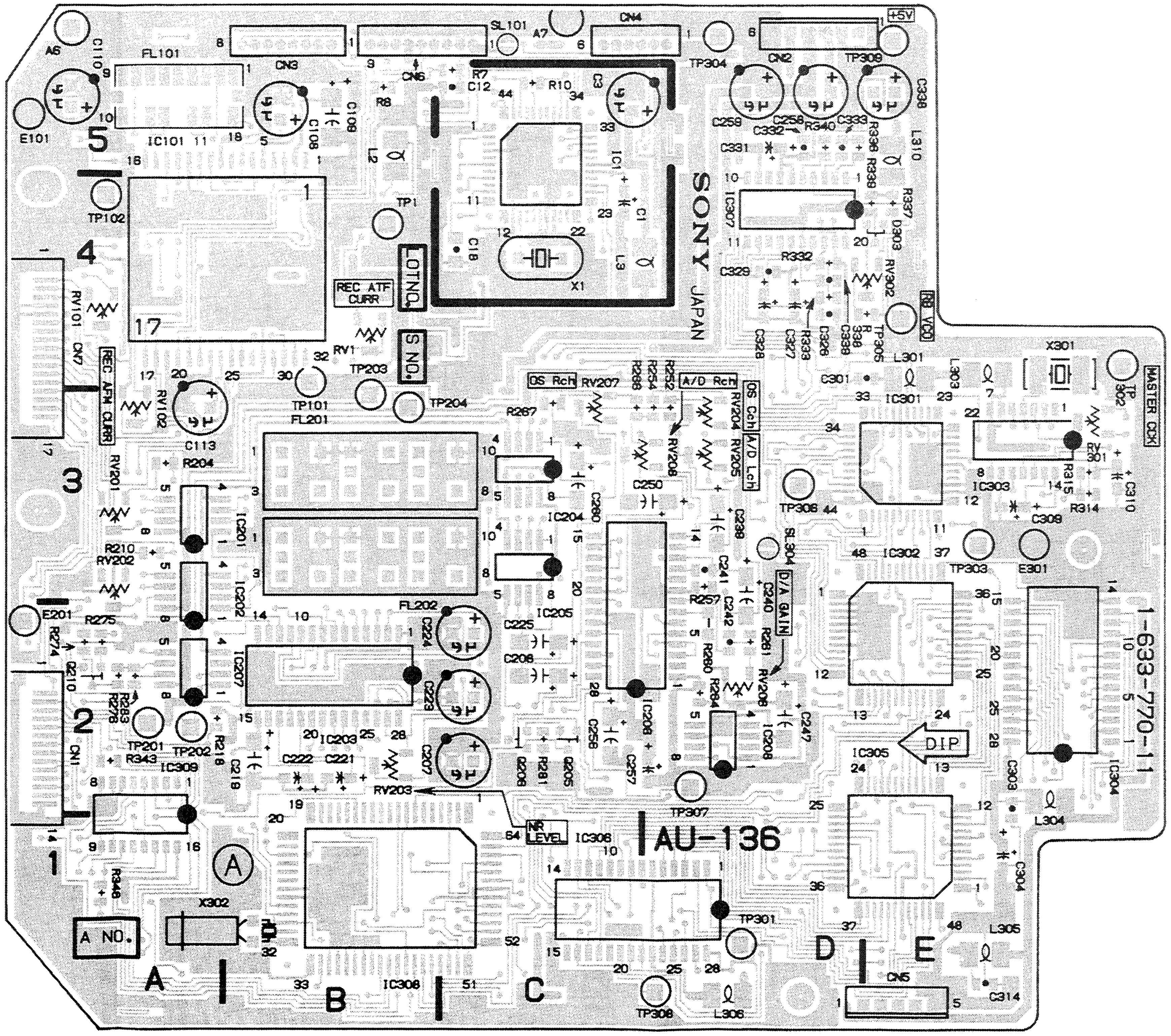
AU-136P ; AFM SIGNAL PROCESS/ATF SERVO PCM AUDIO PROCESS

AU-136P(1-633-770-11) A SIDE

CN1	A-2
CN2	D-5
CN3	B-5
CN4	C-5
CN5	E-1
CN6	B-5
CN7	A-4
D303	E-4
E101	A-5
E201	A-2
E301	E-3
FL101	A-5
FL201	B-3
FL202	B-2
IC1	C-5
IC101	A-5
IC201	B-3
IC202	B-3
IC203	B-2
IC204	C-3
IC205	C-2
IC206	D-2
IC207	B-2
IC208	D-2
IC301	E-3
IC302	E-3
IC303	E-3
IC304	E-2
IC305	D-2
IC306	C-1
IC307	D-4
IC308	B-1
IC309	A-2
Q205	C-2
Q206	C-2
Q210	A-2
RV1	B-4
RV101	A-4
RV102	A-3
RV201	A-3
RV202	A-3
RV203	B-2
RV204	D-3
RV205	D-3
RV206	D-2
RV207	C-4
RV208	D-3
RV301	E-3
RV302	D-4
TP1	B-4
TP101	B-3
TP102	A-4
TP201	A-2
TP202	A-2
TP203	B-4
TP204	B-3
TP301	D-1
TP302	E-4
TP303	E-3
TP304	D-5
TP305	E-4
TP306	D-3
TP307	D-2
TP308	D-1
TP309	D-5
X1	C-1
X301	E-4
X302	A-1

AU-136P(1-633-770-11) B SIDE

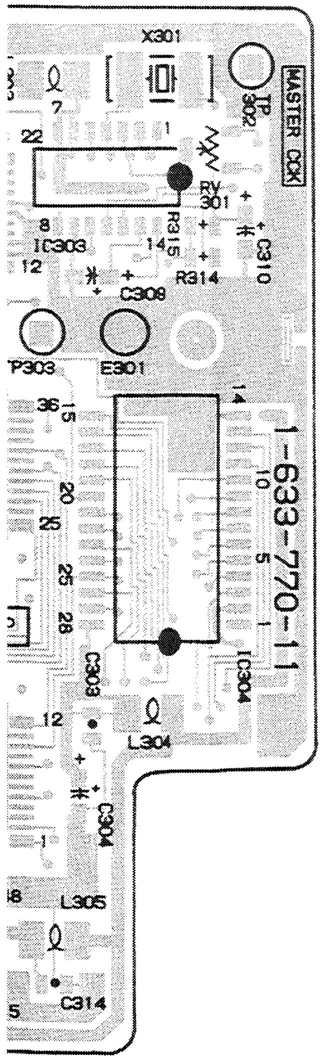
D201	C-3
D202	D-4
D203	C-3
D204	A-2
D301	E-3
D302	E-3
D304	C-1
D305	D-4
D306	E-3
Q1	B-5
Q2	C-4
Q3	C-4
Q4	B-4
Q5	B-4
Q6	B-4
Q101	B-4
Q102	A-4
Q103	A-3
Q104	A-4
Q106	A-5
Q201	C-3
Q202	C-3
Q203	D-3
Q204	C-3
Q207	C-1
Q208	C-2
Q209	C-2
Q211	A-2
Q301	D-5
Q302	D-5
Q303	D-5
Q304	E-4
Q305	A-1
Q306	A-1
Q307	B-1
Q308	D-4



SONY JAPAN
AU-136
1-633-770-11
A
B
C
D
E
1
2
3
4
5
FL101
IC101
CN3
SL101
CN4
CN6
CN2
+5V
TP304
TP309
A6
E101
TP102
RV101
CN7
REC AFM CURR
RV102
C113
RV201
REC ATF CURR
LOTNO.
S NO.
RV1
TP1
TP203
TP101
FL201
TP204
X1
IC1
OS Rch
RV207
A/D Rch
OS Cch
A/D Lch
RV204
RV205
RV208
IC204
IC205
IC201
IC202
IC207
FL202
D/A GAIN
RV206
IC208
IC307
RV302
D303
RB VCO
X301
MASTER CCK
L301
IC301
IC303
RV301
TP306
IC302
TP303
E301
IC304
IC305
DIP
TP307
E201
R210
RV202
R275
Q210
CN1
TP201
TP202
IC309
IC203
RV203
NR LEVEL
IC306
IC308
A NO.
X302
TP301
TP308
L306
L304
L305
CN5
C314

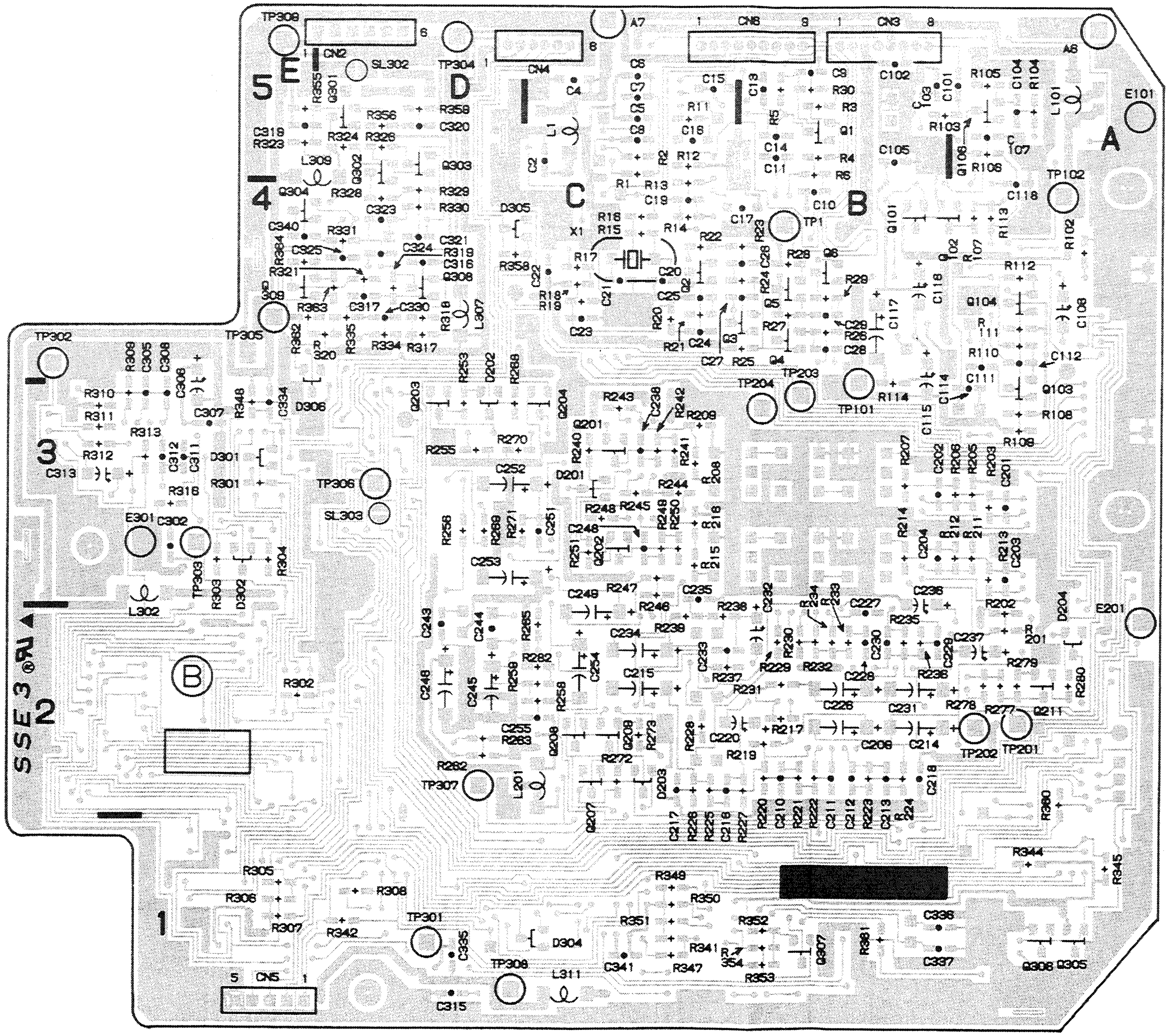
AU-136/P A SI
1-633-770-11(1)
EVV-9000
EVV-9000P

A Side is the same as COMPONENT Side


X301
TP302
MASTER CCK
RV301
R315
IC303
C310
R314
C308
E301
TP303
1-633-770-11
IC304
C309
L304
C304
L305
C314

AU-136/P —A SIDE—
1-633-770-11(1)
EVV-9000
EVV-9000P

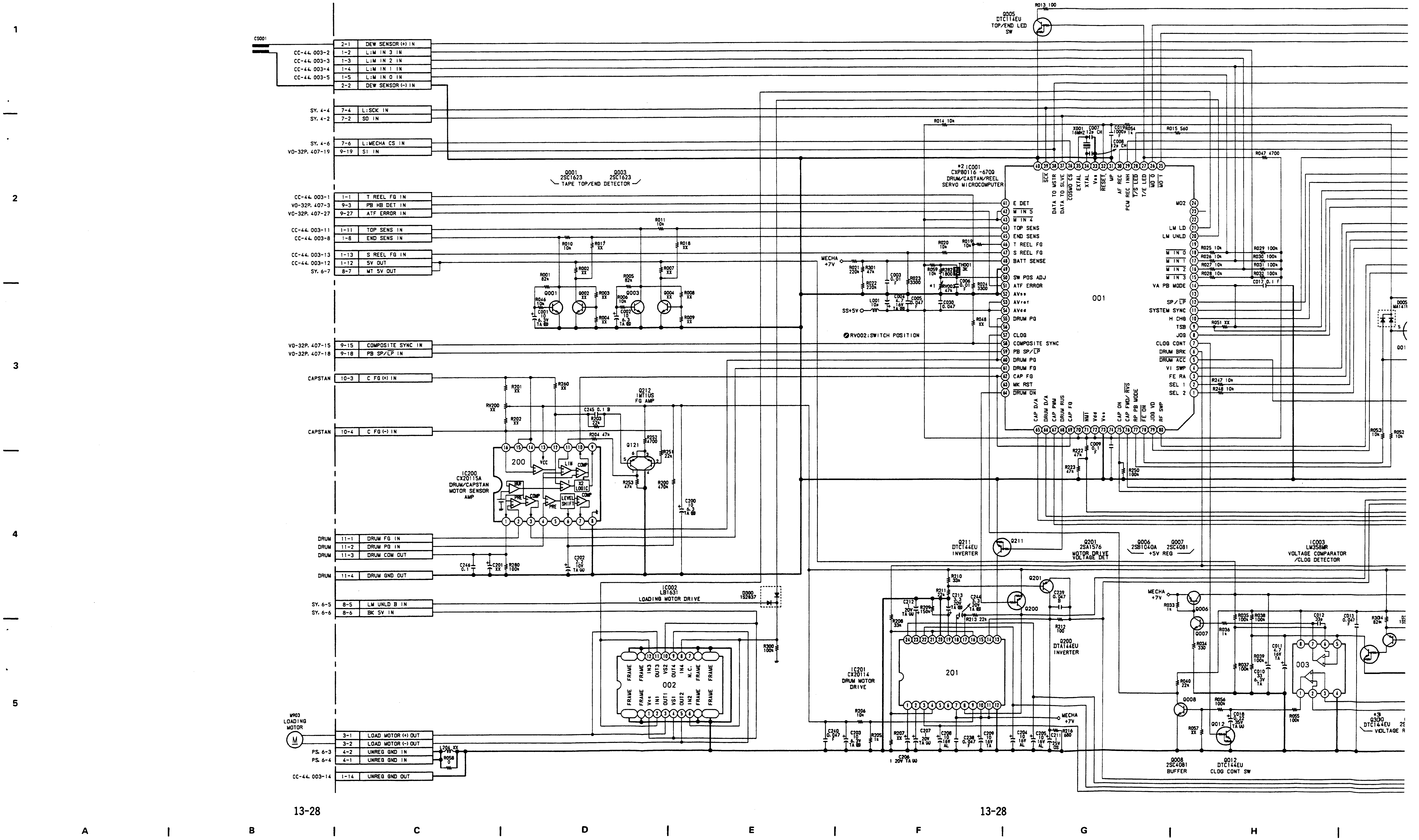
…ame as COMPONENT Side

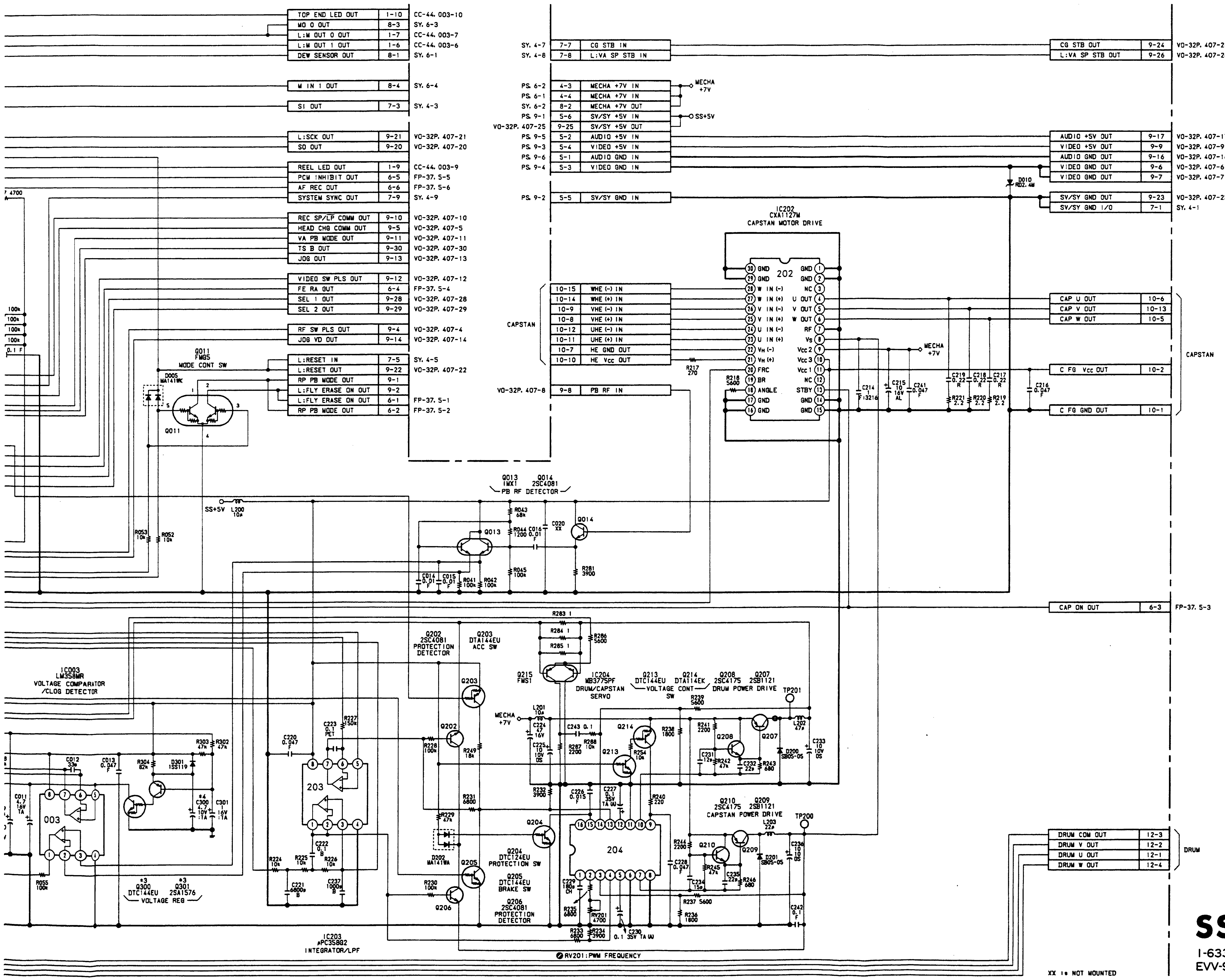

TP309
CN2
SL302
TP304
CN4
A7
CN8
CN3
A8
E101
5
E
D
C
B
A
4
3
2
1
SSE3
TP302
TP305
TP306
SL303
E301
TP303
L302
B
TP307
TP301
TP308
CN5
C315
L311
D304
TP1
TP101
TP102
TP201
TP202
TP203
TP204
E201
X1
D305
D306
D301
D302
D201
D202
D203
D204
Q1
Q2
Q3
Q4
Q5
Q6
Q101
Q102
Q103
Q104
Q106
Q201
Q202
Q203
Q204
Q207
Q208
Q209
Q211
Q301
Q302
Q303
Q304
Q305
Q306
Q307
Q308
L1
L101
L201
L307
L309

AU-136/P —B SIDE—
1-633-770-11(1)
EVV-9000
EVV-9000P

B Side is the same as SOLDER Side

SS-43P ; SERVO SYSTEM/MECHANISM CONTROL


CS001
CC-44, 003-2
CC-44, 003-3
CC-44, 003-4
CC-44, 003-5
2-1 DEW SENSOR (+) IN
1-2 L:M IN 3 IN
1-3 L:M IN 2 IN
1-4 L:M IN 1 IN
1-5 L:M IN 0 IN
2-2 DEW SENSOR (–) IN
SY, 4-4
SY, 4-2
7-4 L:SCK IN
7-2 SO IN
SY, 4-6
VO-32P, 407-19
7-6 L:MECHA CS IN
9-19 SI IN
CC-44, 003-1
VO-32P, 407-3
VO-32P, 407-27
1-1 T REEL FG IN
9-3 PB HB DET IN
9-27 ATF ERROR IN
CC-44, 003-11
CC-44, 003-8
1-11 TOP SENS IN
1-8 END SENS IN
CC-44, 003-13
CC-44, 003-12
SY, 6-7
1-13 S REEL FG IN
1-12 SV OUT
8-7 MT 5V OUT
VO-32P, 407-15
VO-32P, 407-18
9-15 COMPOSITE SYNC IN
9-18 PB SP/LP IN
CAPSTAN 10-3 C FG (+) IN
CAPSTAN 10-4 C FG (–) IN
DRUM 11-1 DRUM FG IN
DRUM 11-2 DRUM PG IN
DRUM 11-3 DRUM COM OUT
DRUM 11-4 DRUM GND OUT
SY, 6-5
SY, 6-6
8-5 LM UNLD B IN
8-6 BK 5V IN
M903 LOADING MOTOR
M
3-1 LOAD MOTOR (+) OUT
3-2 LOAD MOTOR (–) OUT
PS, 6-3 4-2 UNREG GND IN
PS, 6-4 4-1 UNREG GND IN
CC-44, 003-14 1-14 UNREG GND OUT
Q001 2SC1623
Q003 2SC1623
TAPE TOP/END DETECTOR
Q005 DTC114EU TOP/END LED SW
*2 IC001 CXP80116-6700 DRUM/CASTAN/REEL SERVO MICROCOMPUTER
001
E DET
M IN 5
M IN 4
TOP SENS
END SENS
T REEL FG
S REEL FG
BATT SENSE
SW POS ADJ
ATF ERROR
AVss
AVref
AVdd
DRUM PG
CLOG
COMPOSITE SYNC
PB SP/LP
DRUM PG
DRUM FG
CAP FG
MK RST
DRUM ON
SCK
DATA TO MSTR
DATA TO SLVE
COSWO CS
EXTAL
XTAL
Vss
RESET
MP
AF REC
PCM REC INH
T/S LED
T/E LED
MO 0
MO 1
MO2
LM LD
LM UNLD
M IN 0
M IN 1
M IN 2
M IN 3
VA PB MODE
SP/LP
SYSTEM SYNC
H CHG
TSB
JOG
CLOG CONT
DRUM BRK
DRUM ACC
VI SWP
FE RA
SEL 1
SEL 2
CAP D/A
DRUM D/A
CAP PWM
DRUM RUS
CAP FG
NMI
Vdd
Vss
CAP ON
CAP FWD/RVS
RP PB MODE
FE ON
JOG VD
RF SWP
X001 16MHz
MECHA +7V
SS+5V
RV002:SWITCH POSITION
Q212 IMT1US FG AMP
Q121
IC200 CX20115A DRUM/CAPSTAN MOTOR SENSOR AMP
200
BUF
PRE
COMP
LIM
LEVEL SHIFT
X2 LOGIC
IC002 LB1631 LOADING MOTOR DRIVE
002
FRAME
D300 1SS237
Q211 DTC144EU INVERTER
Q201 2SA1576 MOTOR DRIVE VOLTAGE DET
Q200 DTA144EU INVERTER
IC201 CX20114 DRUM MOTOR DRIVE
201
MECHA +7V
Q006 2SB1040A
Q007 2SC4081
+5V REG
IC003 LM358MR VOLTAGE COMPARATOR /CLOG DETECTOR
003
Q008 2SC4081 BUFFER
Q012 DTC144EU CLOG CONT SW
Q300 DTC144EU VOLTAGE R
D005 MA141
1
2
3
4
5
A
B
C
D
E
F
G
H
13-28
13-28


TOP END LED OUT 1-10 CC-44, 003-10
MO 0 OUT 8-3 SY, 6-3
L:M OUT 0 OUT 1-7 CC-44, 003-7
L:M OUT 1 OUT 1-6 CC-44, 003-6
DEW SENSOR OUT 8-1 SY, 6-1
M IN 1 OUT 8-4 SY, 6-4
SI OUT 7-3 SY, 4-3
L:SCK OUT 9-21 VO-32P, 407-21
SO OUT 9-20 VO-32P, 407-20
REEL LED OUT 1-9 CC-44, 003-9
PCM INHIBIT OUT 6-5 FP-37, 5-5
AF REC OUT 6-6 FP-37, 5-6
SYSTEM SYNC OUT 7-9 SY, 4-9
REC SP/LP COMM OUT 9-10 VO-32P, 407-10
HEAD CHG COMM OUT 9-5 VO-32P, 407-5
VA PB MODE OUT 9-11 VO-32P, 407-11
TS B OUT 9-30 VO-32P, 407-30
JOG OUT 9-13 VO-32P, 407-13
VIDEO SW PLS OUT 9-12 VO-32P, 407-12
FE RA OUT 6-4 FP-37, 5-4
SEL 1 OUT 9-28 VO-32P, 407-28
SEL 2 OUT 9-29 VO-32P, 407-29
RF SW PLS OUT 9-4 VO-32P, 407-4
JOG VD OUT 9-14 VO-32P, 407-14
L:RESET IN 7-5 SY, 4-5
L:RESET OUT 9-22 VO-32P, 407-22
RP PB MODE OUT 9-1
L:FLY ERASE ON OUT 9-2
L:FLY ERASE ON OUT 6-1 FP-37, 5-1
RP PB MODE OUT 6-2 FP-37, 5-2
Q011 FMG5 MODE CONT SW
D005 MA141WK
SY, 4-7 7-7 CG STB IN
SY, 4-8 7-8 L:VA SP STB IN
PS, 6-2 4-3 MECHA +7V IN
PS, 6-1 4-4 MECHA +7V IN
SY, 6-2 8-2 MECHA +7V OUT
PS, 9-1 5-6 SV/SY +5V IN
VO-32P, 407-25 9-25 SV/SY +5V OUT
PS, 9-5 5-2 AUDIO +5V IN
PS, 9-3 5-4 VIDEO +5V IN
PS, 9-6 5-1 AUDIO GND IN
PS, 9-4 5-3 VIDEO GND IN
PS, 9-2 5-5 SV/SY GND IN
MECHA +7V
SS+5V
CG STB OUT 9-24 VO-32P, 407-24
L:VA SP STB OUT 9-26 VO-32P, 407-26
AUDIO +5V OUT 9-17 VO-32P, 407-17
VIDEO +5V OUT 9-9 VO-32P, 407-9
AUDIO GND OUT 9-16 VO-32P, 407-16
VIDEO GND OUT 9-6 VO-32P, 407-6
VIDEO GND OUT 9-7 VO-32P, 407-7
D010 RD2.4M
SV/SY GND OUT 9-23 VO-32P, 407-23
SV/SY GND I/O 7-1 SY, 4-1
IC202 CXA1127M CAPSTAN MOTOR DRIVE
CAPSTAN
10-15 WHE (-) IN
10-14 WHE (+) IN
10-9 VHE (-) IN
10-8 VHE (+) IN
10-12 UHE (-) IN
10-11 UHE (+) IN
10-7 HE GND OUT
10-10 HE Vcc OUT
VO-32P, 407-8 9-8 PB RF IN
CAP U OUT 10-6
CAP V OUT 10-13
CAP W OUT 10-5
C FG Vcc OUT 10-2
C FG GND OUT 10-1
CAPSTAN
CAP ON OUT 6-3 FP-37, 5-3
Q013 IMX1 Q014 2SC4081 PB RF DETECTOR
IC003 LM358MR VOLTAGE COMPARATOR /CLOG DETECTOR
Q202 2SC4081 PROTECTION DETECTOR
Q203 DTA144EU ACC SW
Q215 FMS1
IC204 MB3775PF DRUM/CAPSTAN SERVO
Q213 DTC144EU Q214 DTA114EK VOLTAGE CONT SW
Q208 2SC4175 Q207 2SB1121 DRUM POWER DRIVE
TP201
Q210 2SC4175 Q209 2SB1121 CAPSTAN POWER DRIVE
TP200
Q204 DTC124EU PROTECTION SW
Q205 DTC144EU BRAKE SW
Q206 2SC4081 PROTECTION DETECTOR
D202 MA141WA
*3 Q300 DTC144EU *3 Q301 2SA1576 VOLTAGE REG
IC203 μPC358G2 INTEGRATOR/LPF
RV201:PWM FREQUENCY
DRUM COM OUT 12-3
DRUM V OUT 12-2
DRUM U OUT 12-1
DRUM W OUT 12-4
DRUM

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO
*1	RV002 CHANGED 100K → 47K	EK:10101-
*2	IC001 CHANGED CXP80P116-1-503 → CXP80116-670Q	
*3	Q300 CHANGED DTC144ES → DTC144EU Q301 CHANGED 2SA1175 → 2SA1576	
*4	C300 CHANGED 4.7/16V → 4.7/10V	

XX is NOT MOUNTED

SS-43P

1-633-780-11, 12 (1)
EVV-9000P

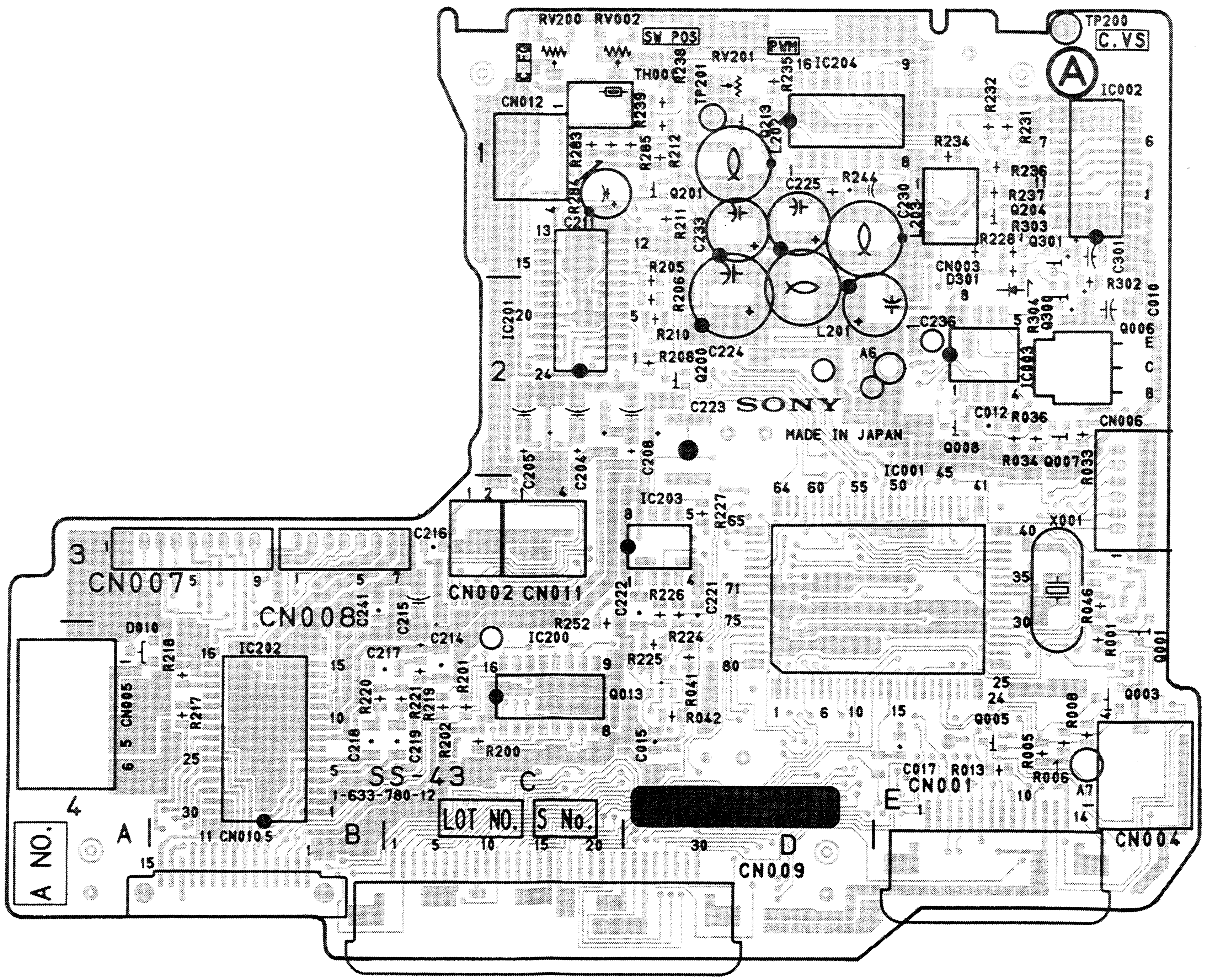
SS-43P ; SERVO SYSTEM/MECHANISM CONTROL

SS-43P(1-633-780-11,12) A SIDE

CN001	E-4
CN002	C-3
CN003	E-1
CN004	E-4
CN005	A-4
CN006	E-2
CN007	A-3
CN008	B-3
CN009	D-4
CN010	B-4
CN011	C-3
CN012	C-1
D010	A-4
D301	E-2
IC001	E-2
IC002	E-1
IC003	E-2
IC200	C-4
IC201	C-2
IC202	B-4
IC203	D-3
IC204	D-1
Q001	E-4
Q003	E-4
Q005	E-4
Q006	E-2
Q007	E-2
Q008	E-2
Q013	C-4
Q200	D-2
Q201	D-1
Q204	E-1
Q213	D-1
Q300	E-2
Q301	E-1
RV002	C-1
RV201	D-1
TH001	D-1
TP200	E-1
TP201	D-1
X001	E-3

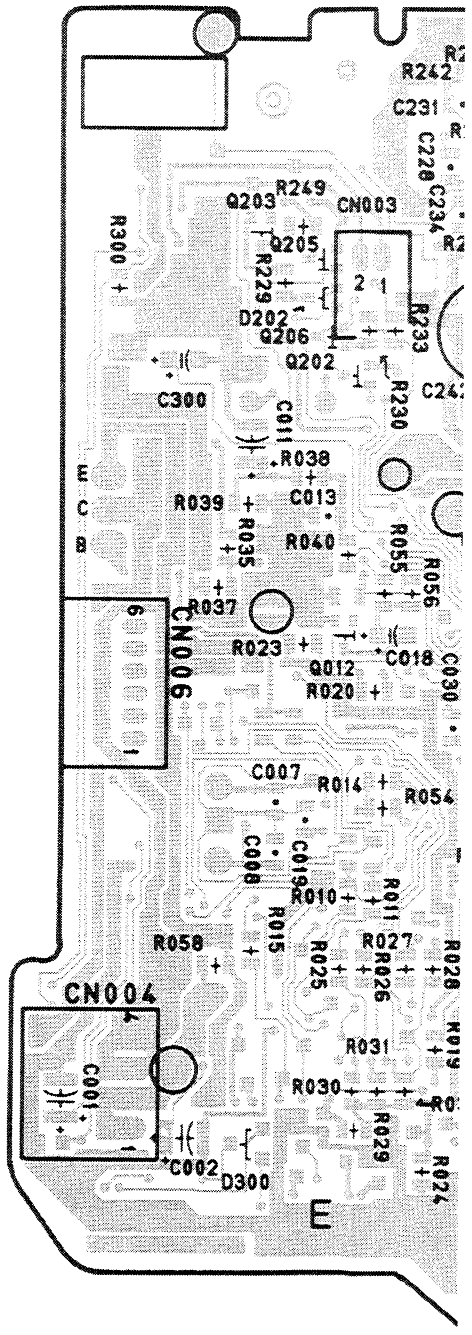
SS-43P(1-633-780-11,12) B SIDE

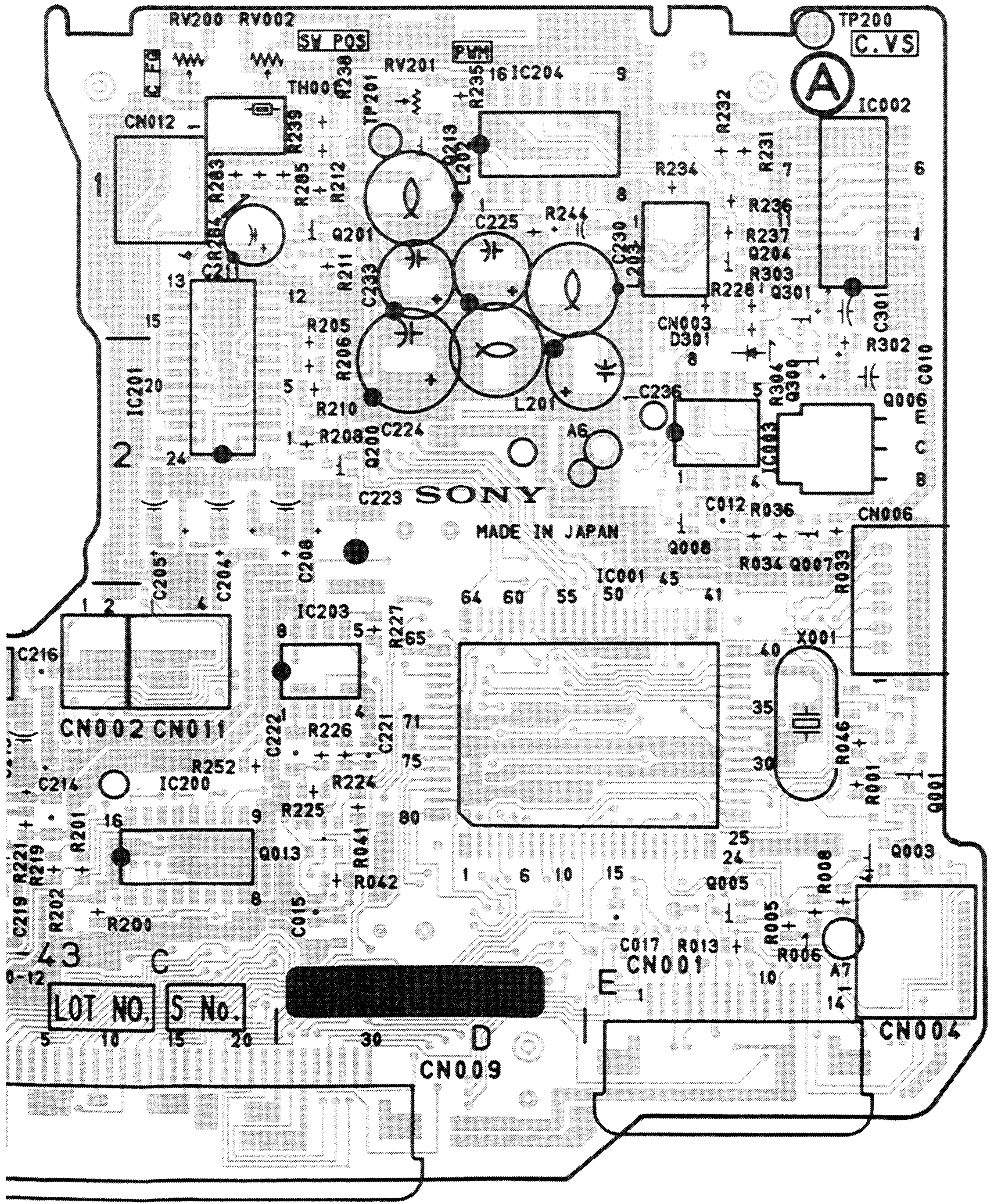
D005	C-4
D200	D-1
D201	D-2
D202	E-1
D300	E-4
Q011	B-4
Q012	E-2
Q014	D-4
Q202	E-1
Q203	E-1
Q205	E-1
Q206	E-1
Q207	D-1
Q208	D-1
Q209	D-1
Q210	D-1
Q211	D-3
Q212	C-3
Q214	D-1
Q215	D-1


RV200 RV002
SW POS
PWM
TP200
C.VS
A
IC002
CN012
TH001
RV201
IC204
SONY
MADE IN JAPAN
IC001
IC201
IC203
IC200
IC202
X001
CN007
CN008
CN002 CN011
CN005
CN006
CN003
D301
IC003
Q006
Q013
Q003
Q005
CN001
CN004
D010
SS-43
1-633-780-12
LOT NO.
S No.
CN010
CN009
A NO.
A
B
C
D
E
1
2
3
4

SS-43/P —A SIDE—
1-633-780-11, 12(1)
EVV-9000
EVV-9000P

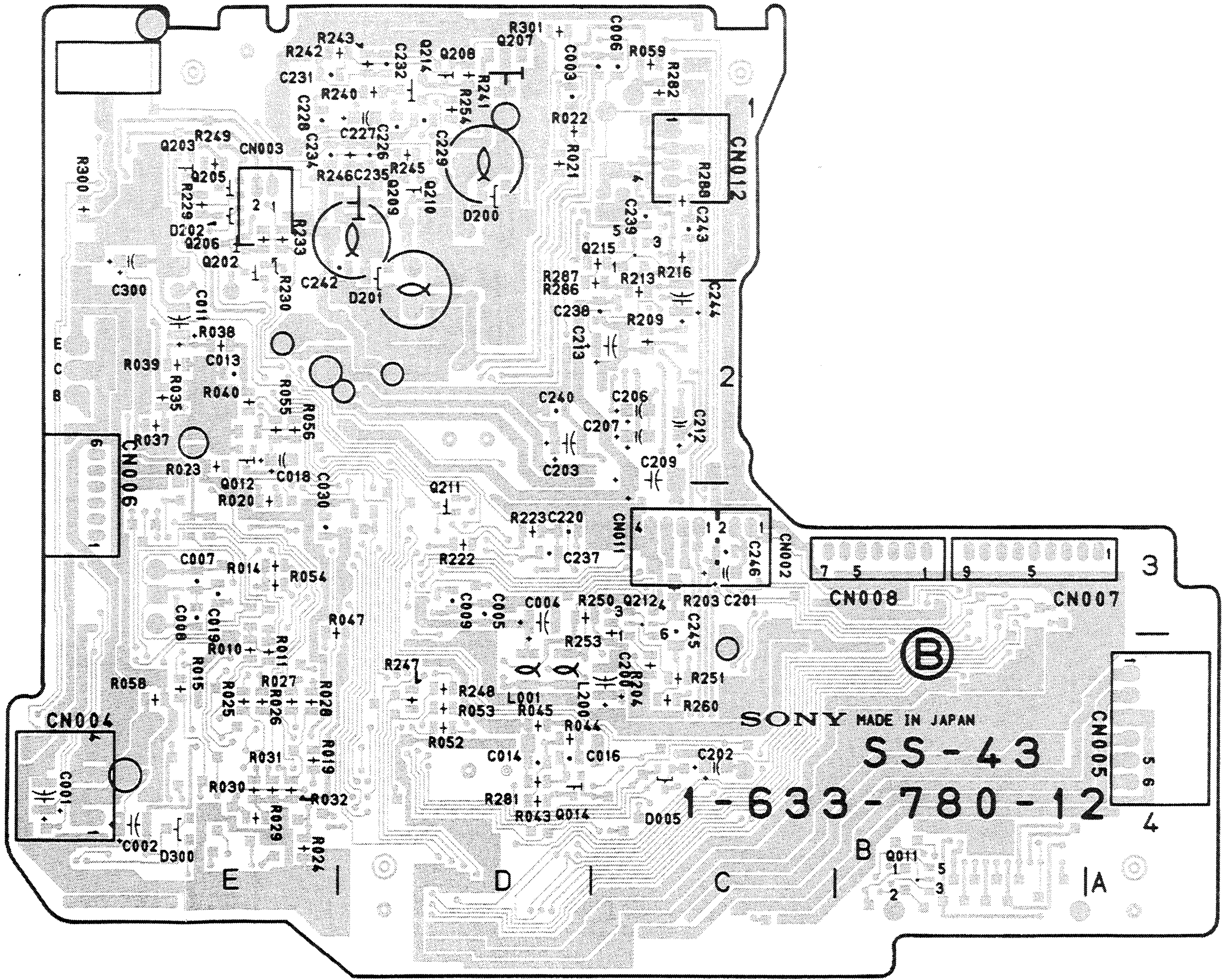
A Side is the same as COMPONENT Side


R242
C231
R300
Q203
R249
CN003
Q205
D202
Q206
Q202
R233
R230
C300
R038
C013
R039
R035
R040
R055
R056
CN006
R037
R023
C018
Q012
R020
C030
C007
R014
R054
C008
C019
R010
R011
R015
R058
R025
R027
R026
R028
CN004
C001
R031
R030
R029
C002
D300
R024
E


A
SONY
MADE IN JAPAN
IC001
IC002
IC200
IC201
IC203
IC204
CN001
CN002
CN003
CN004
CN006
CN009
CN011
CN012
TP200
C.VS
SW POS
PWM
RV200
RV002
RV201
X001
LOT NO.
S No.

SS-43/P A SIDE
1-633-780-11, 12(1)
EVV-9000
EVV-9000P

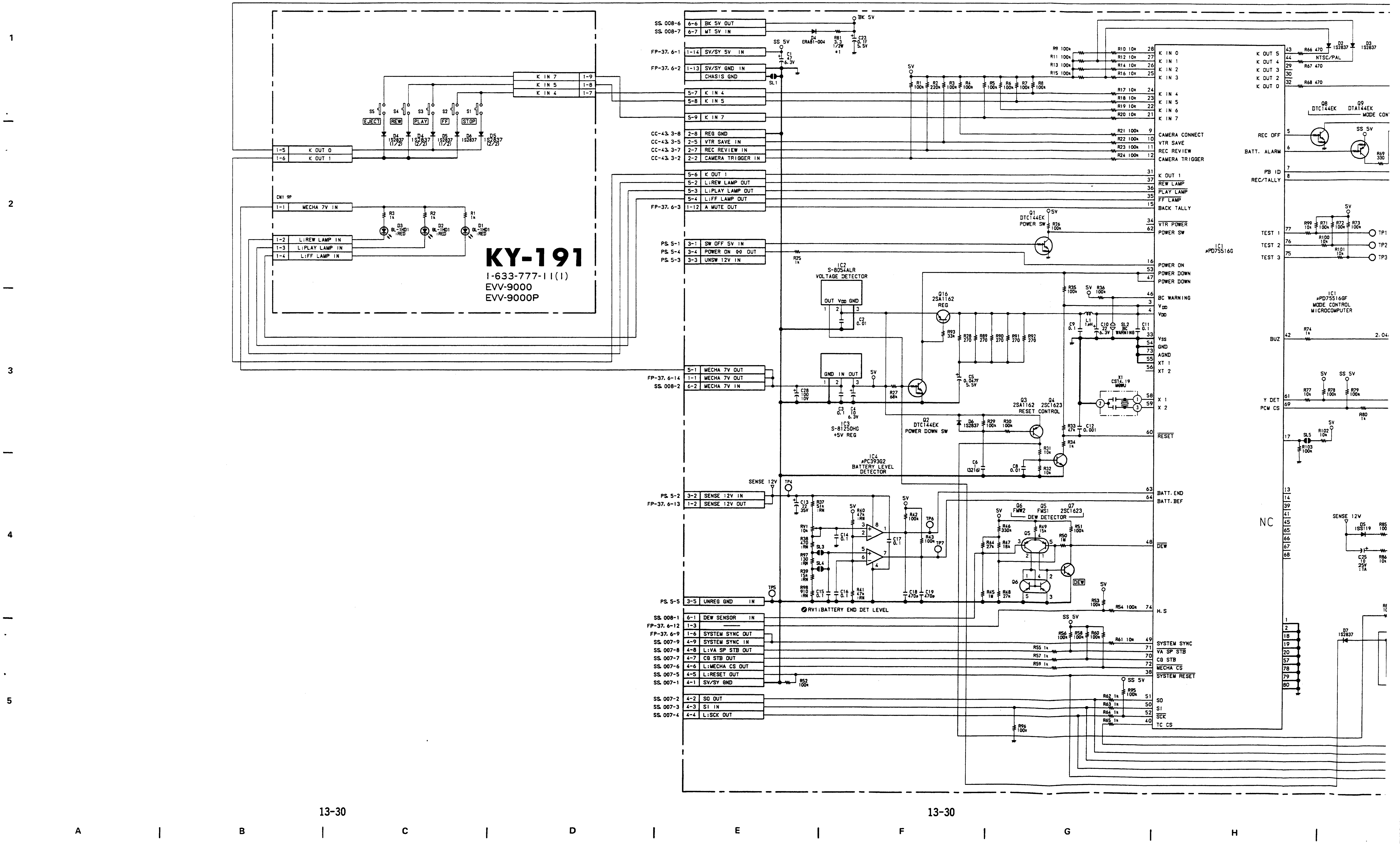
A Side is the same as COMPONENT Side


B
SONY MADE IN JAPAN
SS-43
1-633-780-12
CN002
CN003
CN004
CN005
CN006
CN007
CN008
CN011
CN012
D200
D201
D300
L001
L200

SS-43/P B SIDE
1-633-780-11, 12(1)
EVV-9000
EVV-9000P

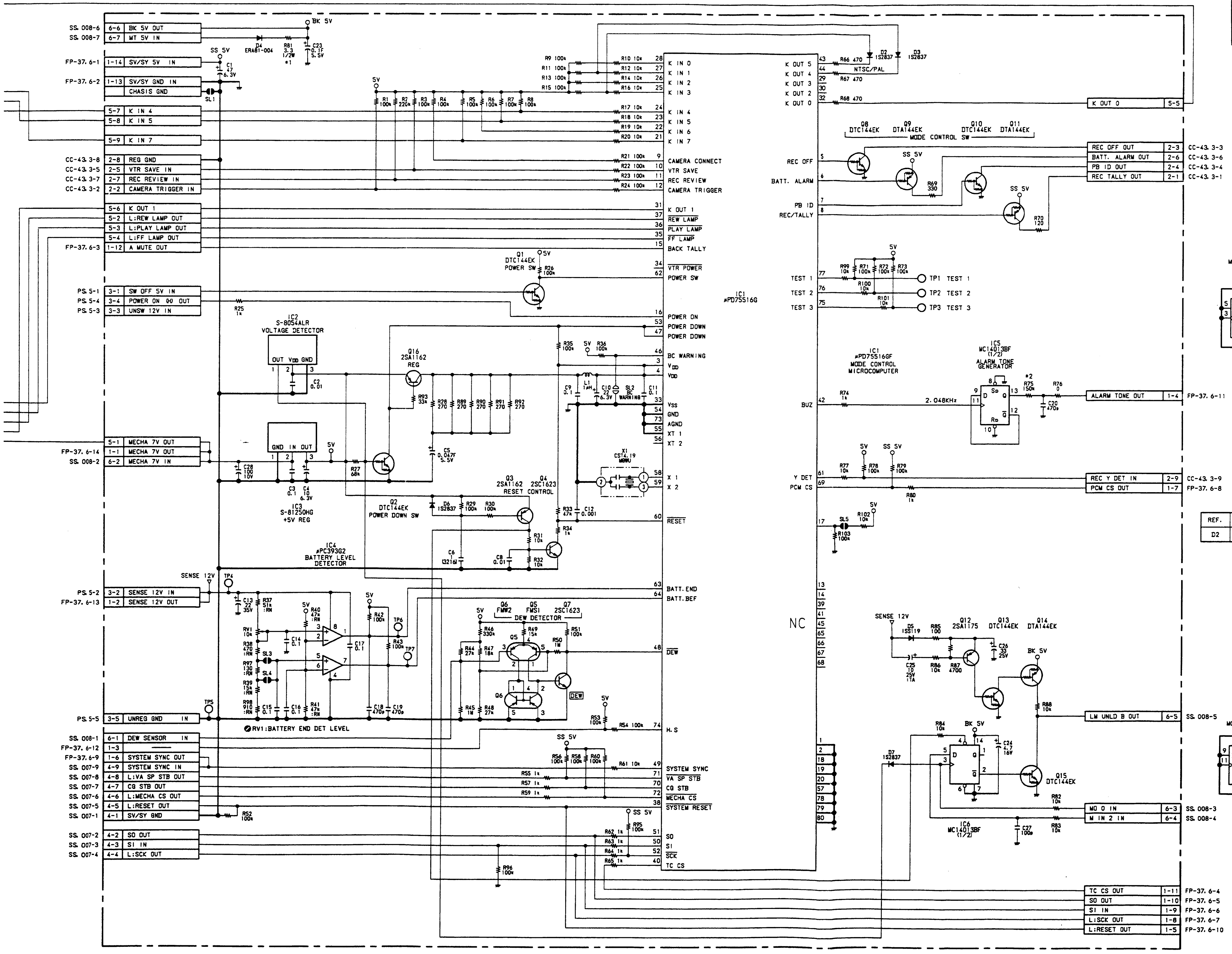
B Side is the same as SOLDER Side

SY-153P; SYSTEM CONTROL
KY-191; FUNCTION KEY BOARD


KY-191
1-633-777-11(1)
EVV-9000
EVV-9000P
S5 EJECT
S4 REW
S3 PLAY
S2 FF
S1 STOP
K IN 7
K IN 5
K IN 4
K OUT 0
K OUT 1
CN1 9P
MECHA 7V IN
L:REW LAMP IN
L:PLAY LAMP IN
L:FF LAMP IN
D1 GL-1HD1 :RED
D2 GL-1HD1 :RED
D3 GL-1HD1 :RED
BK 5V OUT
MT 5V IN
SV/SY 5V IN
SV/SY GND IN
CHASIS GND
REG GND
VTR SAVE IN
REC REVIEW IN
CAMERA TRIGGER IN
L:REW LAMP OUT
L:PLAY LAMP OUT
L:FF LAMP OUT
A MUTE OUT
SW OFF 5V IN
POWER ON 9-0 OUT
UNSW 12V IN
MECHA 7V OUT
SENSE 12V IN
SENSE 12V OUT
UNREG GND IN
DEW SENSOR IN
SYSTEM SYNC OUT
SYSTEM SYNC IN
L:VA SP STB OUT
CG STB OUT
L:MECHA CS OUT
L:RESET OUT
SV/SY GND
SO OUT
SI IN
L:SCK OUT
IC2 S-8054ALR VOLTAGE DETECTOR
Q16 2SA1162 REG
IC3 S-81250HG +5V REG
Q1 DTC144EK POWER SW
Q2 DTC144EK POWER DOWN SW
Q3 2SA1162 Q4 2SC1623 RESET CONTROL
IC4 μPC393G2 BATTERY LEVEL DETECTOR
Q6 FMW2 Q5 FMS1 Q7 2SC1623 DEW DETECTOR
RV1:BATTERY END DET LEVEL
X1 CST4.19 MGWU
IC1 μPD75516G
IC1 μPD75516GF MODE CONTROL MICROCOMPUTER
K IN 0
K IN 1
K IN 2
K IN 3
K IN 6
CAMERA CONNECT
VTR SAVE
REC REVIEW
CAMERA TRIGGER
REW LAMP
PLAY LAMP
FF LAMP
BACK TALLY
VTR POWER
POWER SW
POWER ON
POWER DOWN
BC WARNING
VDD
VSS
GND
AGND
XT 1
XT 2
X 1
X 2
RESET
BATT. END
BATT. BEF
DEW
H.S
SYSTEM SYNC
VA SP STB
CG STB
MECHA CS
SYSTEM RESET
SO
SI
SCK
TC CS
NC
K OUT 5
K OUT 4
K OUT 3
K OUT 2
K OUT 0
NTSC/PAL
Q8 DTC144EK
Q9 DTA144EK
MODE CON
REC OFF
BATT. ALARM
PB ID
REC/TALLY
TEST 1
TEST 2
TEST 3
TP1
TP2
TP3
BUZ
Y DET
PCM CS
SENSE 12V
D5 1SS119
D7 1S2837
1
2
3
4
5
A
B
C
D
E
F
G
H

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO
*1	R81 DELETED	UC:10951- J:10551- EK:10001-
*2	R75 CHANGED 330K → 150K	



SS 008-6 6-6 BK 5V OUT
SS 008-7 6-7 MT 5V IN
FP-37. 6-1 1-14 SV/SY 5V IN
FP-37. 6-2 1-13 SV/SY GND IN
CHASIS GND
5-7 K IN 4
5-8 K IN 5
5-9 K IN 7
CC-43. 3-8 2-8 REG GND
CC-43. 3-5 2-5 VTR SAVE IN
CC-43. 3-7 2-7 REC REVIEW IN
CC-43. 3-2 2-2 CAMERA TRIGGER IN
5-6 K OUT 1
5-2 L:REW LAMP OUT
5-3 L:PLAY LAMP OUT
5-4 L:FF LAMP OUT
FP-37. 6-3 1-12 A MUTE OUT
PS. 5-1 3-1 SW OFF 5V IN
PS. 5-4 3-4 POWER ON 90 OUT
PS. 5-3 3-3 UNSW 12V IN
5-1 MECHA 7V OUT
FP-37. 6-14 1-1 MECHA 7V OUT
SS. 008-2 6-2 MECHA 7V IN
PS. 5-2 3-2 SENSE 12V IN
FP-37. 6-13 1-2 SENSE 12V OUT
PS. 5-5 3-5 UNREG GND IN
SS. 008-1 6-1 DEW SENSOR IN
FP-37. 6-12 1-3
FP-37. 6-9 1-6 SYSTEM SYNC OUT
SS. 007-9 4-9 SYSTEM SYNC IN
SS. 007-8 4-8 L:VA SP STB OUT
SS. 007-7 4-7 CG STB OUT
SS. 007-6 4-6 L:MECHA CS OUT
SS. 007-5 4-5 L:RESET OUT
SS. 007-1 4-1 SV/SY GND
SS. 007-2 4-2 SO OUT
SS. 007-3 4-3 SI IN
SS. 007-4 4-4 L:SCK OUT
D4 ERA81-004
R81 3.3 1/2W *1
C23 0.1F 5.5V
IC2 S-8054ALR VOLTAGE DETECTOR
Q16 2SA1162 REG
Q1 DTC144EK POWER SW
IC3 S-81250HG +5V REG
Q2 DTC144EK POWER DOWN SW
Q3 2SA1162 Q4 2SC1623 RESET CONTROL
IC4 μPC393G2 BATTERY LEVEL DETECTOR
Q6 FMW2 Q5 FMS1 Q7 2SC1623 DEW DETECTOR
X1 CST4.19 MGWU
RV1:BATTERY END DET LEVEL
IC1 μPD75516G
K IN 0
K IN 1
K IN 2
K IN 3
K IN 4
K IN 5
K IN 6
K IN 7
CAMERA CONNECT
VTR SAVE
REC REVIEW
CAMERA TRIGGER
K OUT 1
REW LAMP
PLAY LAMP
FF LAMP
BACK TALLY
VTR POWER
POWER SW
POWER ON
POWER DOWN
BC WARNING
VDD
VSS
GND
AGND
XT 1
XT 2
X 1
X 2
RESET
BATT.END
BATT.BEF
DEW
H.S
SYSTEM SYNC
VA SP STB
CG STB
MECHA CS
SYSTEM RESET
SO
SI
SCK
TC CS
NC
K OUT 5
K OUT 4
K OUT 3
K OUT 2
K OUT 0
NTSC/PAL
D2 1S2837
D3 1S2837
Q8 DTC144EK Q9 DTA144EK Q10 DTC144EK Q11 DTA144EK MODE CONTROL SW
REC OFF
BATT. ALARM
PB ID
REC/TALLY
TEST 1
TEST 2
TEST 3
TP1 TEST 1
TP2 TEST 2
TP3 TEST 3
IC1 μPD75516GF MODE CONTROL MICROCOMPUTER
IC5 MC14013BF (1/2) ALARM TONE GENERATOR
BUZ
2.048KHz
Y DET
PCM CS
Q12 2SA1175 Q13 DTC144EK Q14 DTA144EK
D5 1SS119
D7 1S2837
Q15 DTC144EK
IC6 MC14013BF (1/2)
IC5 MC14013BF (2/2)
IC6 MC14013BF (2/2)
K OUT 0 5-5
REC OFF OUT 2-3 CC-43. 3-3
BATT. ALARM OUT 2-6 CC-43. 3-6
PB ID OUT 2-4 CC-43. 3-4
REC TALLY OUT 2-1 CC-43. 3-1
ALARM TONE OUT 1-4 FP-37. 6-11
REC Y DET IN 2-9 CC-43. 3-9
PCM CS OUT 1-7 FP-37. 6-8
LM UNLD B OUT 6-5 SS. 008-5
M0 0 IN 6-3 SS. 008-3
M IN 2 IN 6-4 SS. 008-4
TC CS OUT 1-11 FP-37. 6-4
SO OUT 1-10 FP-37. 6-5
SI IN 1-9 FP-37. 6-6
L:SCK OUT 1-8 FP-37. 6-7
L:RESET OUT 1-5 FP-37. 6-10

REF.	NTSC	PAL
D2	NO M'T	1S2837

SY-153/P

1-633-781-11, 12(1)
EVV-9000
EVV-9000P

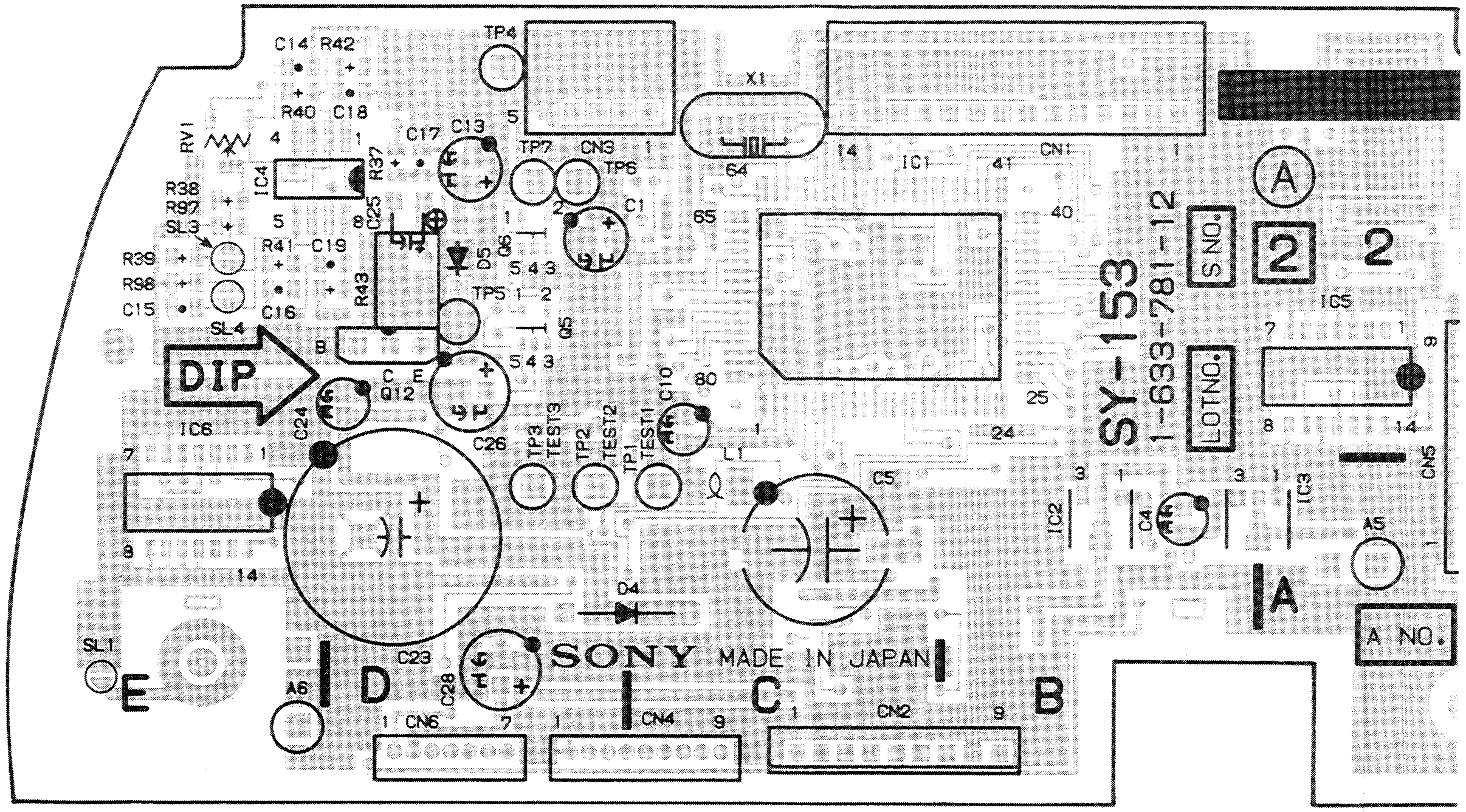
SY-153P ; SYSTEM CONTROL
KY-191 ; FUNCTION KEY BOARD

SY-153P(1-633-781-11,12) A SIDE

CN1	B-3
CN2	C-1
CN3	D-3
CN4	C-1
CN5	A-1
CN6	D-1
D4	D-1
D5	D-2
IC1	C-3
IC2	B-1
IC3	A-1
IC4	E-2
IC5	A-2
IC6	E-2
Q5	D-2
Q6	D-2
Q12	D-2
RV1	E-3
TP1	C-1
TP2	D-2
TP3	D-2
TP4	D-3
TP5	D-2
TP6	D-2
TP7	D-3
X1	C-3

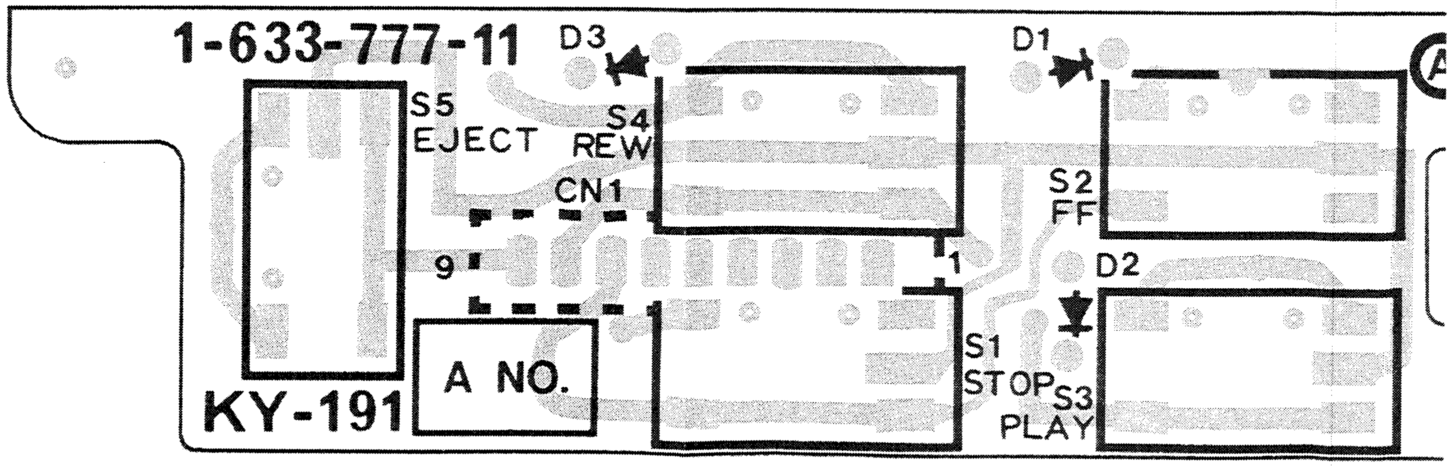
SY-153P(1-633-781-11,12) B SIDE

D2	B-2
D3	A-2
D6	B-2
D7	D-1
Q1	C-2
Q2	B-1
Q3	B-1
Q4	A-1
Q7	D-2
Q8	C-1
Q9	C-1
Q10	C-1
Q11	C-1
Q13	D-2
Q14	D-1
Q15	E-2
Q16	B-1



C14 R42
R40 C18
TP4
X1
RV1
IC4
R37
C17 C13
TP7 CN3 TP6
C1
R38 R97 SL3
R39 R98 C15
R41 C19
C25
D5 Q6
R43
TP5
Q5
C16
SL4
DIP
C E
Q12
C24
IC6
C26
TP3 TEST3
TP2 TEST2
TP1 TEST1
C10
L1
C5
IC1
CN1
IC5
IC2 C4 IC3
CN5
A5
SY-153
1-633-781-12
S NO.
LOT NO.
A NO.
D4
SONY MADE IN JAPAN
SL1
E
A6
D
C23
C28
CN6
CN4
C
CN2
B
A
2

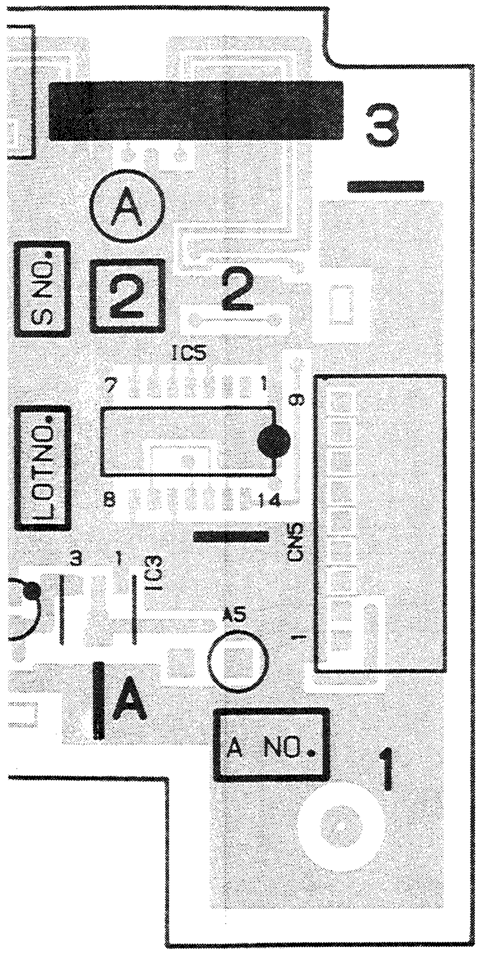
SY-15
1-633-781-11,
EVV-9000



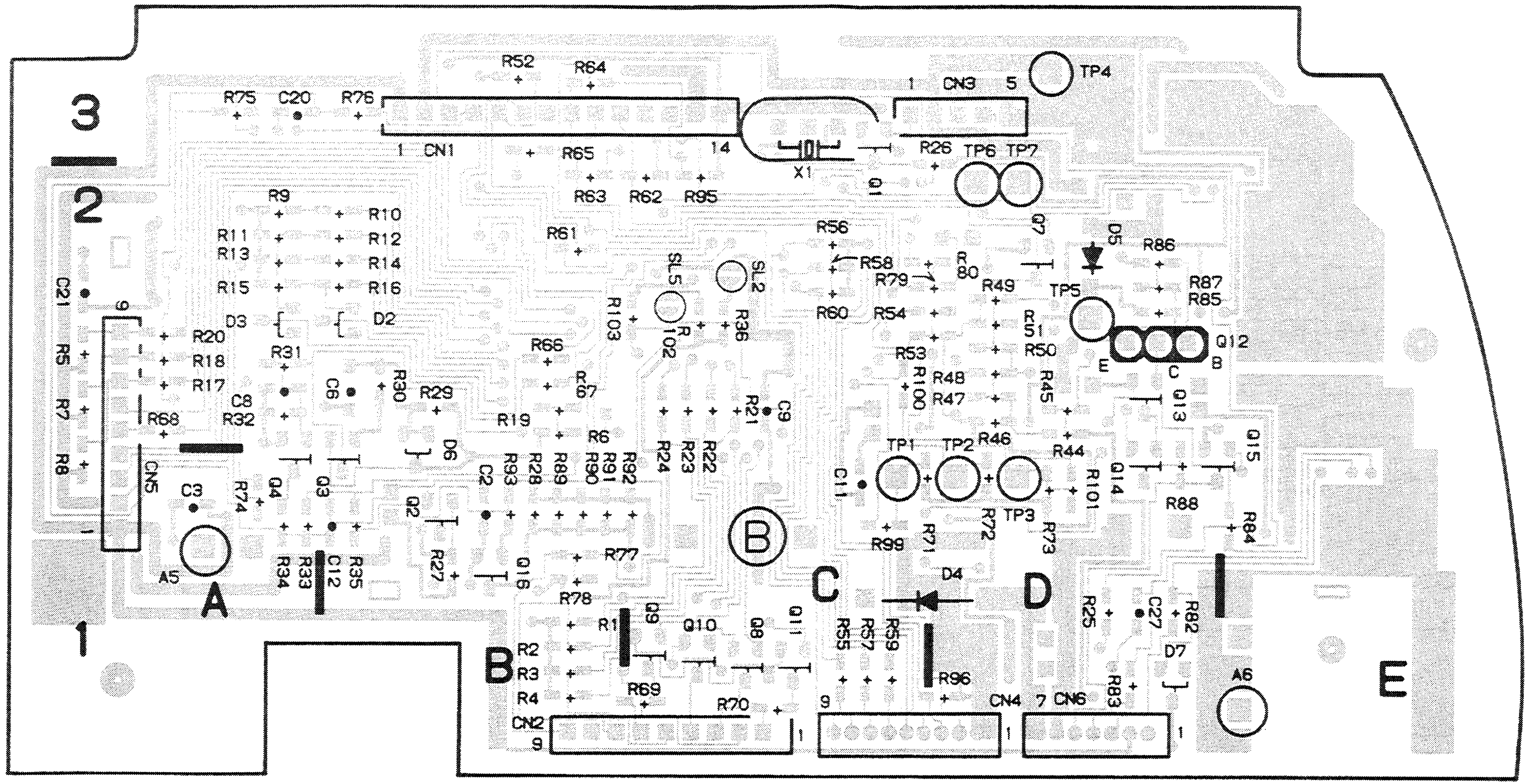
1-633-777-11
D3
D1
S5 EJECT
S4 REW
CN1
S2 FF
D2
9
1
S1 STOP
S3 PLAY
KY-191
A NO.

KY-19
1-633-777-11
EVV-9000
EVV-9000P

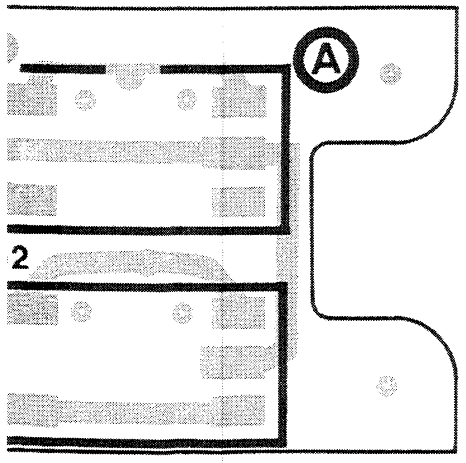
A Side is the same as COMPON


3
2
A
S NO.
2
IC5
7
1
8
14
LOTNO.
3
1
IC3
CN5
A5
A
A NO.
1

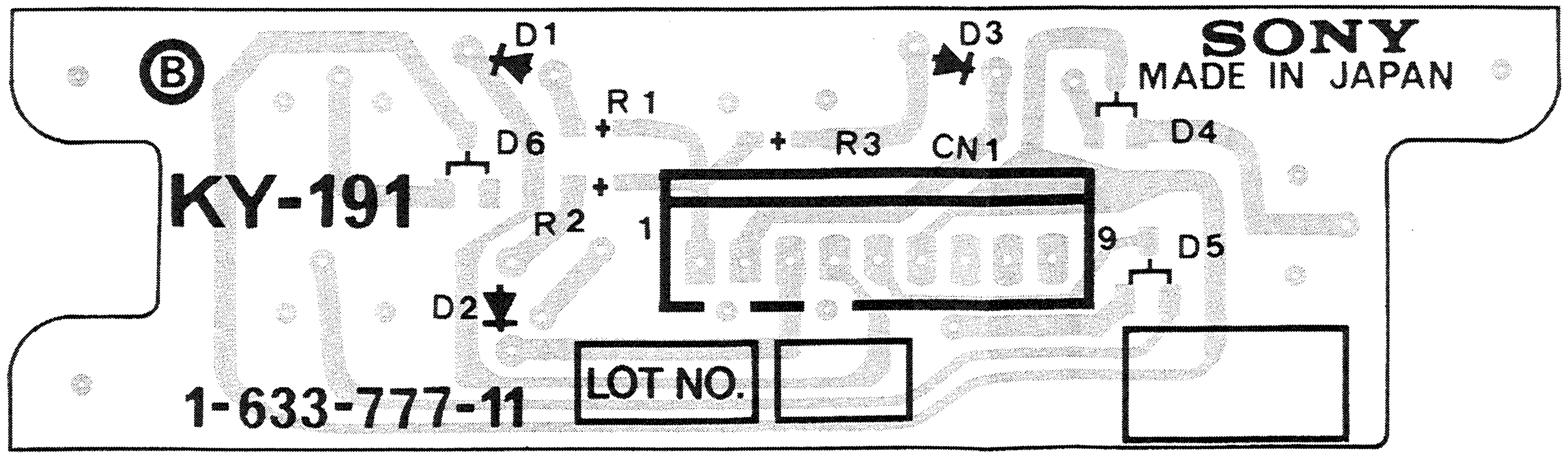
SY-153/P —A SIDE—
1-633-781-11, 12(1)
EVV-9000


3
2
1
R52
R64
R75
C20
R76
CN1
1
14
CN3
5
TP4
R65
X1
R26
TP6
TP7
Q1
R63
R62
R95
R9
R10
R11
R12
R13
R14
R15
R16
R61
R56
R58
R79
R80
R49
D5
R86
R87
R85
TP5
Q7
SL5
SL2
R103
R102
R36
R60
R54
R51
R50
Q12
E
C
B
C21
R5
R7
R8
R20
R18
R17
D3
D2
R31
C6
R30
R29
R66
R67
R53
R100
R48
R47
R45
Q13
R68
C8
R32
R19
R21
C9
R46
R44
TP1
TP2
Q15
CN5
C3
R74
Q4
Q3
D6
C2
R93
R28
R89
R90
R92
R91
R6
R24
R23
R22
C11
TP3
R72
R73
R101
Q14
R88
R84
Q2
B
R71
R99
A5
A
R34
R33
C12
R35
R27
Q16
R77
R78
C
D4
D
R25
C27
R82
Q9
R1
Q10
Q8
Q11
R55
R57
R59
R96
D7
A6
E
R2
R3
R4
R69
R70
CN2
9
1
CN4
7
CN6
R83

SY-153/P —B SIDE—
1-633-781-11, 12(1)



KY-191 —A SIDE—
1-633-777-11(1)
EVV-9000
EVV-9000P

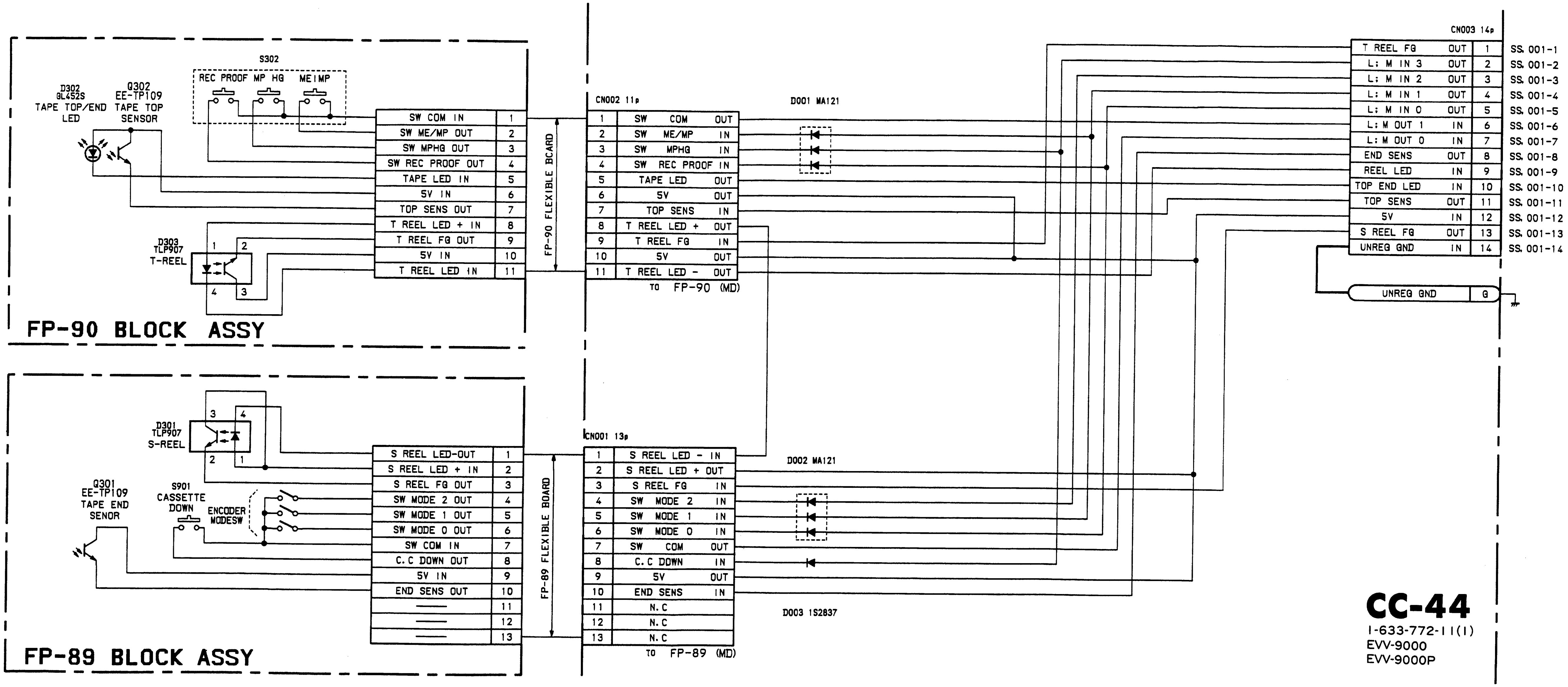

B
D1
D3
SONY
MADE IN JAPAN
R 1
D6
R3
CN1
D4
KY-191
R 2
1
9
D5
D2
1-633-777-11
LOT NO.

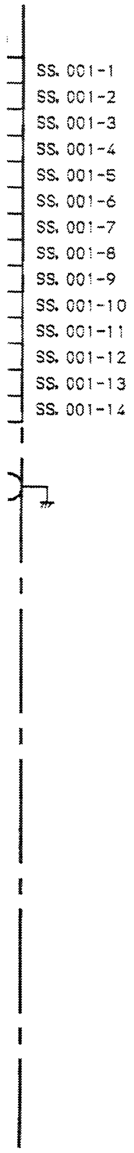
KY-191 —B SIDE—
1-633-777-11(1)
EVV-9000
EVV-9000P

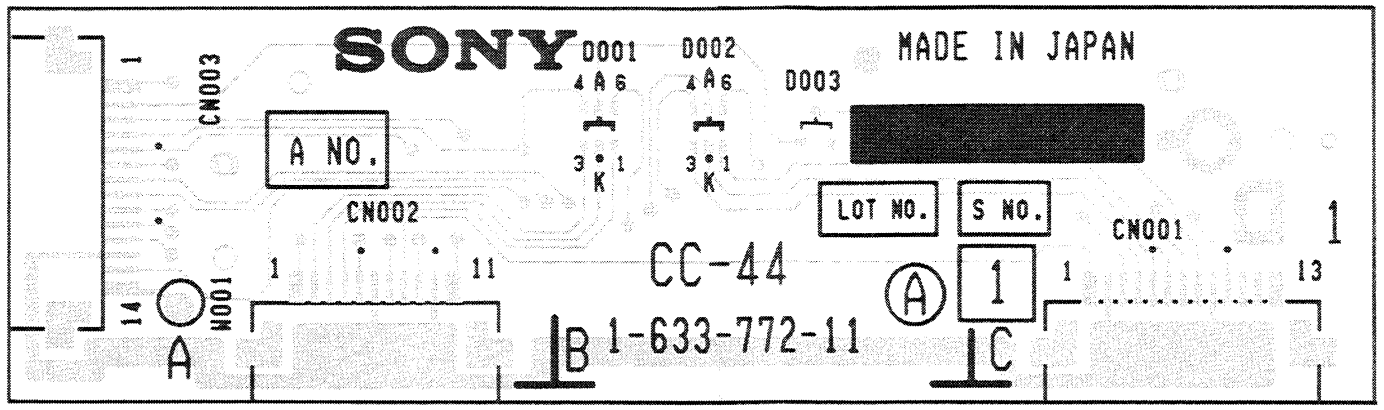
Side is the same as COMPONENT Side

B Side is the same as SOLDER Side

CC-44; TERMINAL
FP-89; MODE SWITCH/TAPE END SENSOR
FP-90; TAPE SELECT SWITCH/TAPE TOP SENSOR

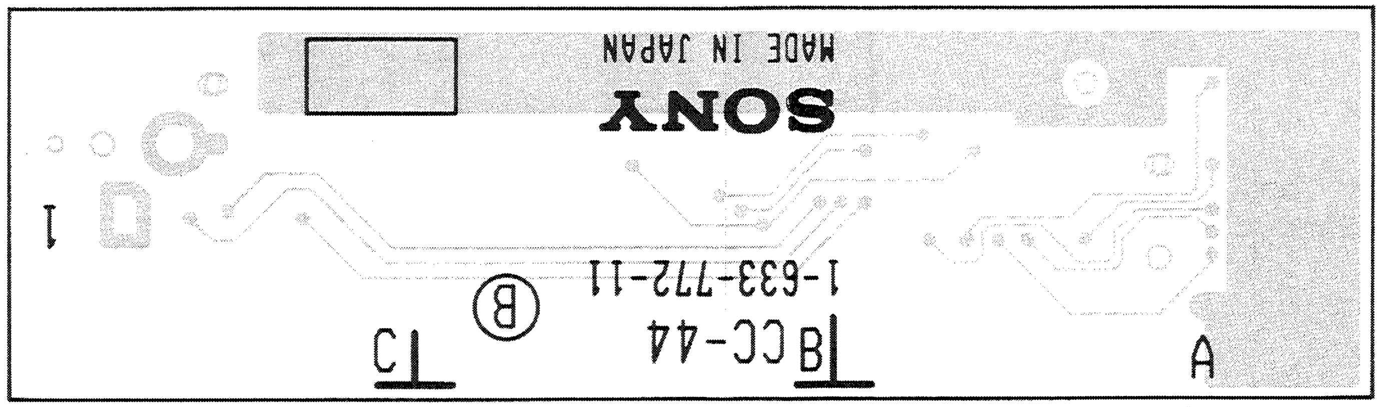

S302
REC PROOF
MP HG
ME I MP
D302
GL452S
TAPE TOP/END
LED
Q302
EE-TP109
TAPE TOP
SENSOR
D303
TLP907
T-REEL
1
2
3
4
SW COM IN 1
SW ME/MP OUT 2
SW MPHG OUT 3
SW REC PROOF OUT 4
TAPE LED IN 5
5V IN 6
TOP SENS OUT 7
T REEL LED + IN 8
T REEL FG OUT 9
5V IN 10
T REEL LED IN 11
FP-90 FLEXIBLE BCARD
FP-90 BLOCK ASSY
CN002 11p
1 SW COM OUT
2 SW ME/MP IN
3 SW MPHG IN
4 SW REC PROOF IN
5 TAPE LED OUT
6 5V OUT
7 TOP SENS IN
8 T REEL LED + OUT
9 T REEL FG IN
10 5V OUT
11 T REEL LED - OUT
TO FP-90 (MD)
D001 MA121
CN003 14p
T REEL FG OUT 1 SS. 001-1
L: M IN 3 OUT 2 SS. 001-2
L: M IN 2 OUT 3 SS. 001-3
L: M IN 1 OUT 4 SS. 001-4
L: M IN 0 OUT 5 SS. 001-5
L: M OUT 1 IN 6 SS. 001-6
L: M OUT 0 IN 7 SS. 001-7
END SENS OUT 8 SS. 001-8
REEL LED IN 9 SS. 001-9
TOP END LED IN 10 SS. 001-10
TOP SENS OUT 11 SS. 001-11
5V IN 12 SS. 001-12
S REEL FG OUT 13 SS. 001-13
UNREG GND IN 14 SS. 001-14
UNREG GND G
D301
TLP907
S-REEL
3
4
2
1
Q301
EE-TP109
TAPE END
SENOR
S901
CASSETTE
DOWN
ENCODER
MODESW
S REEL LED-OUT 1
S REEL LED + IN 2
S REEL FG OUT 3
SW MODE 2 OUT 4
SW MODE 1 OUT 5
SW MODE 0 OUT 6
SW COM IN 7
C.C DOWN OUT 8
5V IN 9
END SENS OUT 10
—— 11
—— 12
—— 13
FP-89 FLEXIBLE BOARD
FP-89 BLOCK ASSY
CN001 13p
1 S REEL LED - IN
2 S REEL LED + OUT
3 S REEL FG IN
4 SW MODE 2 IN
5 SW MODE 1 IN
6 SW MODE 0 IN
7 SW COM OUT
8 C.C DOWN IN
9 5V OUT
10 END SENS IN
11 N.C
12 N.C
13 N.C
TO FP-89 (MD)
D002 MA121
D003 1S2837
CC-44
1-633-772-11(1)
EVV-9000
EVV-9000P


SS. 001-1
SS. 001-2
SS. 001-3
SS. 001-4
SS. 001-5
SS. 001-6
SS. 001-7
SS. 001-8
SS. 001-9
SS. 001-10
SS. 001-11
SS. 001-12
SS. 001-13
SS. 001-14


SONY
D001
D002
D003
MADE IN JAPAN
CN003
A NO.
4 A 6
3 1
K
LOT NO.
S NO.
CN002
CN001
CC-44
1-633-772-11
W001
A
B
C
1
11
13
14

A Side is the same as COMPONENT Side

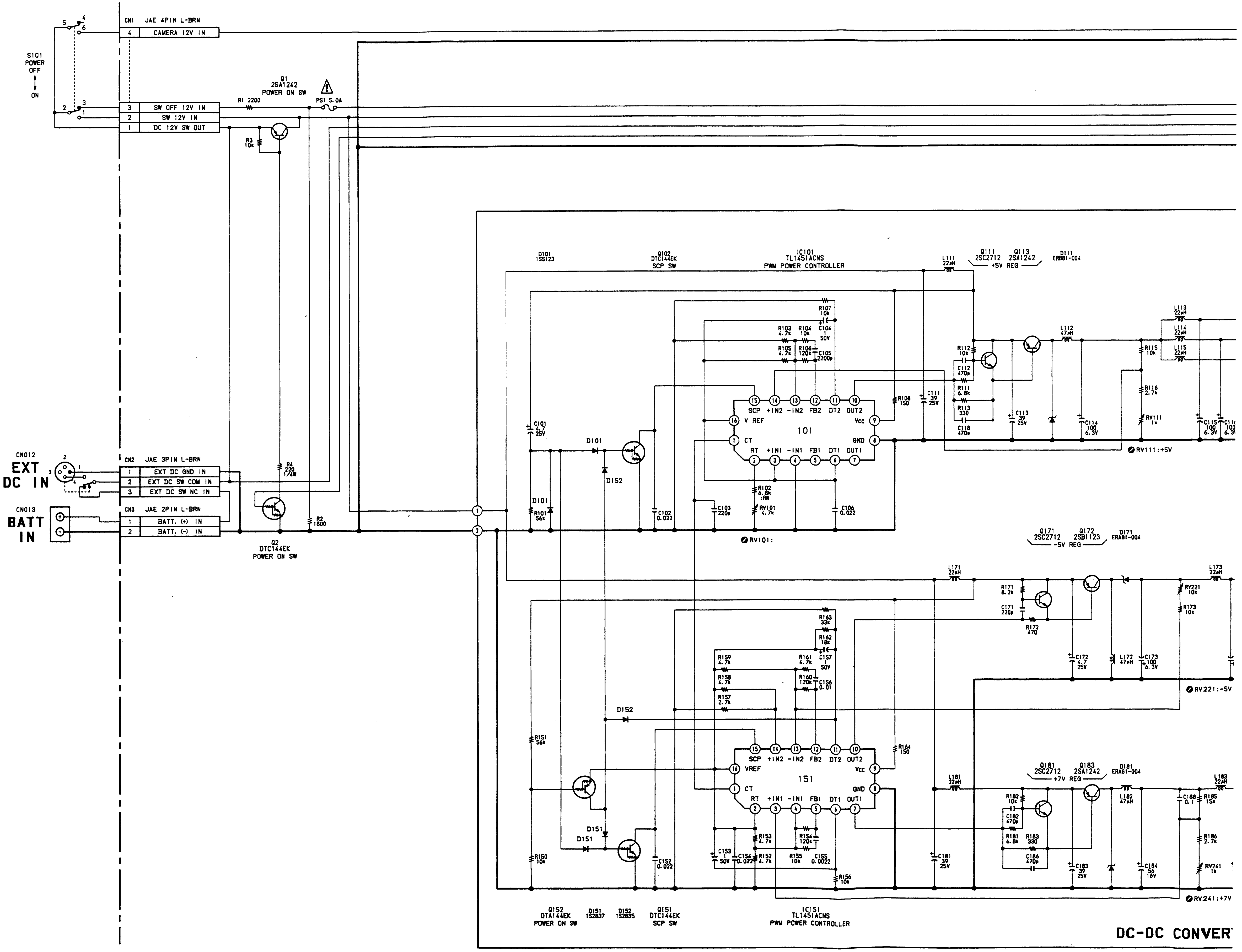
CC-44 A SIDE
1-633-772-11(1)
EVV-9000
EVV-9000P


MADE IN JAPAN
SONY
1-633-772-11
CC-44
A
B
C
1

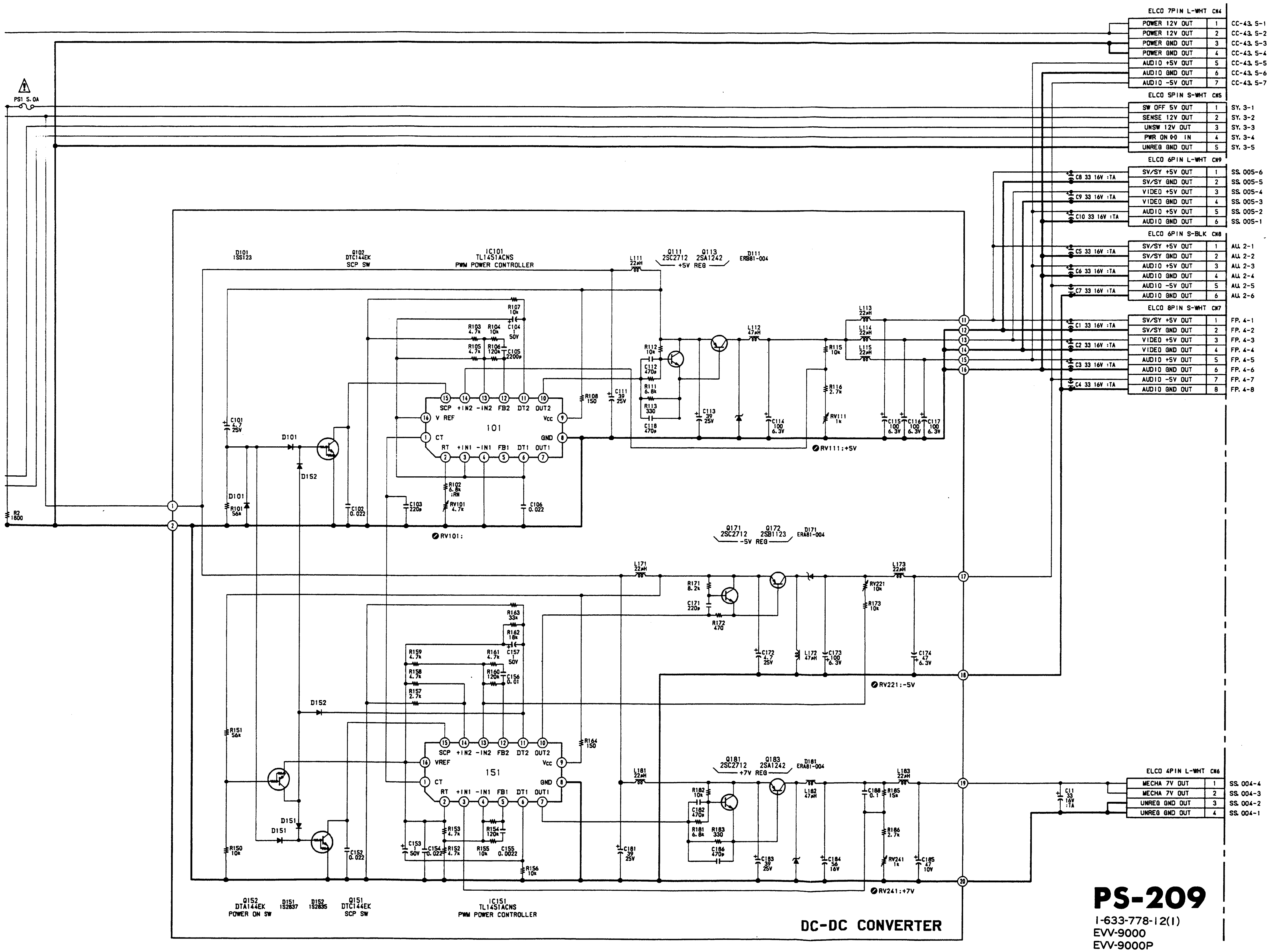
B Side is the same as SOLDER Side

CC-44 B SIDE
1-633-772-11(1)
EVV-9000
EVV-9000P

PS-209; POWER SUPPLY (DC-DC CONVERTER)


S101
POWER
OFF
ON
CN1 JAE 4PIN L-BRN
4 CAMERA 12V IN
3 SW OFF 12V IN
2 SW 12V IN
1 DC 12V SW OUT
Q1
2SA1242
POWER ON SW
R1 2200
PS1 5.0A
R3
10k
R4
220
1/4W
R2
1800
Q2
DTC144EK
POWER ON SW
CN012
EXT
DC IN
CN013
BATT
IN
CN2 JAE 3PIN L-BRN
1 EXT DC GND IN
2 EXT DC SW COM IN
3 EXT DC SW NC IN
CN3 JAE 2PIN L-BRN
1 BATT. (+) IN
2 BATT. (-) IN
D101
1SS123
Q102
DTC144EK
SCP SW
IC101
TL1451ACNS
PWM POWER CONTROLLER
R107
10k
C104
1
50V
R103
4.7k
R104
10k
R105
4.7k
R106
120k
C105
2200p
SCP +IN2 -IN2 FB2 DT2 OUT2
V REF
Vcc
101
CT
GND
RT +IN1 -IN1 FB1 DT1 OUT1
R108
150
C111
39
25V
C101
4.7
25V
D101
D152
R101
56k
C102
0.022
C103
220p
R102
6.8k
:RN
RV101
4.7k
C106
0.022
RV101:
L111
22μH
Q111
2SC2712
Q113
2SA1242
+5V REG
D111
ERB81-004
R112
10k
C112
470p
R111
6.8k
R113
330
C118
470p
C113
39
25V
L112
47μH
C114
100
6.3V
R115
10k
R116
2.7k
RV111
1k
L113
22μH
L114
22μH
L115
22μH
C115
100
6.3V
RV111:+5V
Q171
2SC2712
Q172
2SB1123
-5V REG
D171
ERA81-004
L171
22μH
R171
8.2k
C171
220p
R172
470
C172
4.7
25V
L172
47μH
C173
100
6.3V
RV221
10k
R173
10k
L173
22μH
RV221:-5V
R163
33k
R162
18k
C157
1
50V
R159
4.7k
R161
4.7k
R158
4.7k
R160
120k
C156
0.01
R157
2.7k
D152
R151
56k
SCP +IN2 -IN2 FB2 DT2 OUT2
VREF
Vcc
151
CT
GND
RT +IN1 -IN1 FB1 DT1 OUT1
R164
150
D151
D151
R150
10k
C152
0.022
C153
1
50V
C154
0.022
R153
4.7k
R152
4.7k
R154
120k
R155
10k
C155
0.0022
R156
10k
C181
39
25V
L181
22μH
Q181
2SC2712
Q183
2SA1242
+7V REG
D181
ERA81-004
R182
10k
C182
470p
R181
6.8k
R183
330
C186
470p
C183
39
25V
L182
47μH
C184
56
16V
L183
22μH
C188
0.1
R185
15k
R186
2.7k
RV241
1k
RV241:+7V
Q152
DTA144EK
POWER ON SW
D151
1S2837
D152
1S2835
Q151
DTC144EK
SCP SW
IC151
TL1451ACNS
PWM POWER CONTROLLER
DC-DC CONVER

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.


PS1 5.0A
R2 1800
ELCO 7PIN L-WHT CN4
POWER 12V OUT 1 CC-43. 5-1
POWER 12V OUT 2 CC-43. 5-2
POWER GND OUT 3 CC-43. 5-3
POWER GND OUT 4 CC-43. 5-4
AUDIO +5V OUT 5 CC-43. 5-5
AUDIO GND OUT 6 CC-43. 5-6
AUDIO -5V OUT 7 CC-43. 5-7
ELCO 5PIN S-WHT CN5
SW OFF 5V OUT 1 SY. 3-1
SENSE 12V OUT 2 SY. 3-2
UNSW 12V OUT 3 SY. 3-3
PWR ON (H) IN 4 SY. 3-4
UNREG GND OUT 5 SY. 3-5
ELCO 6PIN L-WHT CN9
SV/SY +5V OUT 1 SS. 005-6
SV/SY GND OUT 2 SS. 005-5
VIDEO +5V OUT 3 SS. 005-4
VIDEO GND OUT 4 SS. 005-3
AUDIO +5V OUT 5 SS. 005-2
AUDIO GND OUT 6 SS. 005-1
ELCO 6PIN S-BLK CN8
SV/SY +5V OUT 1 AU. 2-1
SV/SY GND OUT 2 AU. 2-2
AUDIO +5V OUT 3 AU. 2-3
AUDIO GND OUT 4 AU. 2-4
AUDIO -5V OUT 5 AU. 2-5
AUDIO GND OUT 6 AU. 2-6
ELCO 8PIN S-WHT CN7
SV/SY +5V OUT 1 FP. 4-1
SV/SY GND OUT 2 FP. 4-2
VIDEO +5V OUT 3 FP. 4-3
VIDEO GND OUT 4 FP. 4-4
AUDIO +5V OUT 5 FP. 4-5
AUDIO GND OUT 6 FP. 4-6
AUDIO -5V OUT 7 FP. 4-7
AUDIO GND OUT 8 FP. 4-8
C8 33 16V :TA
C9 33 16V :TA
C10 33 16V :TA
C5 33 16V :TA
C6 33 16V :TA
C7 33 16V :TA
C1 33 16V :TA
C2 33 16V :TA
C3 33 16V :TA
C4 33 16V :TA
ELCO 4PIN L-WHT CN6
MECHA 7V OUT 1 SS. 004-4
MECHA 7V OUT 2 SS. 004-3
UNREG GND OUT 3 SS. 004-2
UNREG GND OUT 4 SS. 004-1
C11 33 16V :TA
D101 1SS123
Q102 DTC144EK SCP SW
IC101 TL1451ACNS PWM POWER CONTROLLER
L111 22μH
Q111 2SC2712
Q113 2SA1242
+5V REG
D111 ERB81-004
R107 10k
R103 4.7k
R104 10k
C104 1 50V
R105 4.7k
R106 120k
C105 2200p
SCP +IN2 -IN2 FB2 DT2 OUT2
V REF
Vcc
101
CT
GND
RT +IN1 -IN1 FB1 DT1 OUT1
R108 150
C111 39 25V
R112 10k
C112 470p
R111 6.8k
R113 330
C118 470p
C113 39 25V
L112 47μH
C114 100 6.3V
R115 10k
R116 2.7k
RV111 1k
L113 22μH
L114 22μH
L115 22μH
C115 100 6.3V
C116 100 6.3V
C117 100 6.3V
RV111:+5V
C101 4.7 25V
D101
D152
D101
R101 56k
C102 0.022
C103 220p
R102 6.8k :RN
RV101 4.7k
C106 0.022
RV101:
Q171 2SC2712
Q172 2SB1123
-5V REG
D171 ERA81-004
L171 22μH
R171 8.2k
C171 220p
R172 470
RV221 10k
R173 10k
L173 22μH
C172 4.7 25V
L172 47μH
C173 100 6.3V
C174 47 6.3V
RV221:-5V
R163 33k
R162 18k
R159 4.7k
R161 4.7k
C157 1 50V
R158 4.7k
R160 120k
C156 0.01
R157 2.7k
D152
R151 56k
R164 150
SCP +IN2 -IN2 FB2 DT2 OUT2
VREF
Vcc
151
CT
GND
RT +IN1 -IN1 FB1 DT1 OUT1
L181 22μH
Q181 2SC2712
Q183 2SA1242
+7V REG
D181 ERA81-004
L183 22μH
R182 10k
C182 470p
R181 6.8k
R183 330
C186 470p
L182 47μH
C188 0.1
R185 15k
R186 2.7k
RV241 1k
D151
D151
R150 10k
C152 0.022
C153 1 50V
C154 0.022
R153 4.7k
R152 4.7k
R154 120k
R155 10k
C155 0.0022
R156 10k
C181 39 25V
C183 39 25V
C184 56 16V
C185 47 10V
RV241:+7V
Q152 DTA144EK POWER ON SW
D151 1S2837
D152 1S2835
Q151 DTC144EK SCP SW
IC151 TL1451ACNS PWM POWER CONTROLLER
1
2
11
12
13
14
15
16
17
18
19
20
DC-DC CONVERTER

PS-209

1-633-778-12(1)
EVV-9000
EVV-9000P

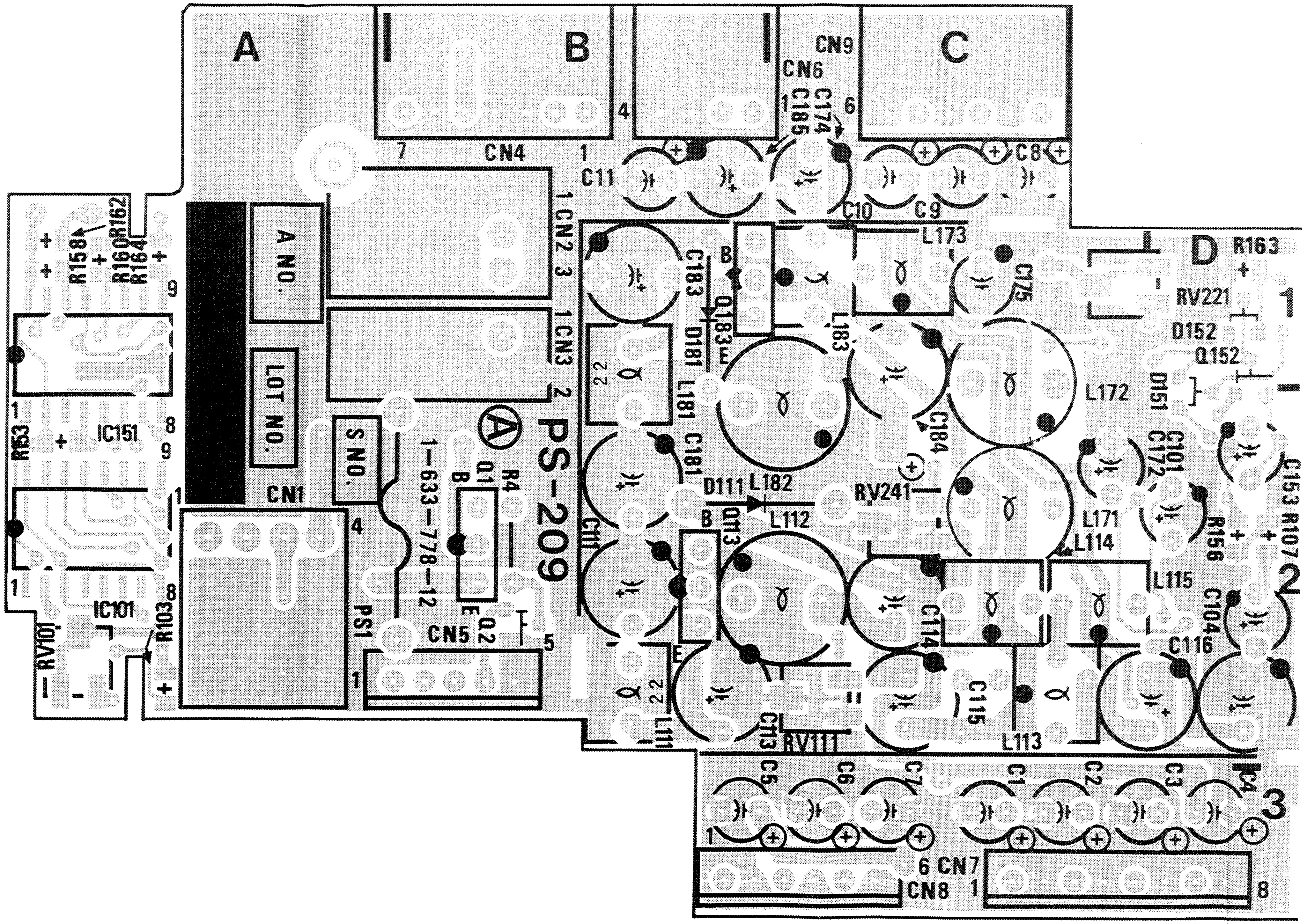
PS-209 ; POWER SUPPLY (DC-DC CONVERTER)

PS-209(1-633-778-12) A SIDE

CN1	A-2
CN2	B-1
CN3	B-1
CN4	B-1
CN5	B-2
CN6	C-1
CN7	D-3
CN8	C-3
CN9	C-1
D111	B-2
D151	D-2
D152	D-1
D181	B1
IC101	A-2
IC151	A-2
PS1	A-2
Q1	B-2
Q2	B-2
Q113	B-2
Q152	D-1
Q183	B-1
RV101	A-2
RV111	C-2
RV221	D-1
RV241	C-2

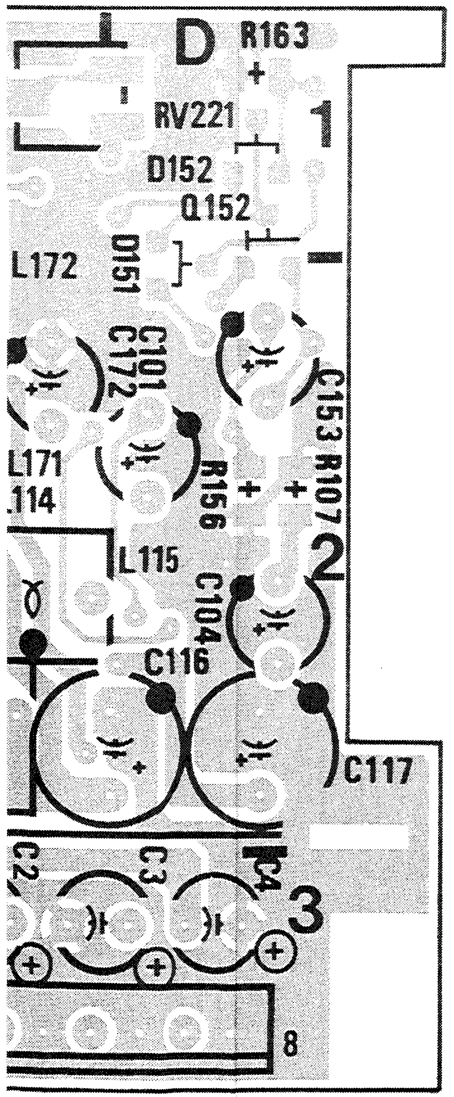
PS-209(1-633-778-12) B SIDE

D101	D-2
D171	C-1
Q102	C-2
Q111	B-2
Q151	A-2
Q171	D-1
Q172	C-2
Q181	B-1


A
B
C
D
1
2
3
CN4
CN9
CN6
C174
C185
C11
C10
C9
C8
L173
R163
RV221
D152
Q152
D151
L172
C101
C172
C153
R107
R156
L171
L114
L115
C104
C116
C115
L113
C114
RV241
C184
L182
L112
D111
Q113
C183
D181
Q183
L183
C175
L181
C181
C111
C113
RV111
L111
C5
C6
C7
C1
C2
C3
C4
CN7
CN8
A NO.
LOT NO.
S NO.
CN1
CN2
CN3
CN5
PS1
PS-209
1-633-778-12
R4
Q1
Q2
R158
R160
R162
R164
R153
IC151
IC101
R103
RV101

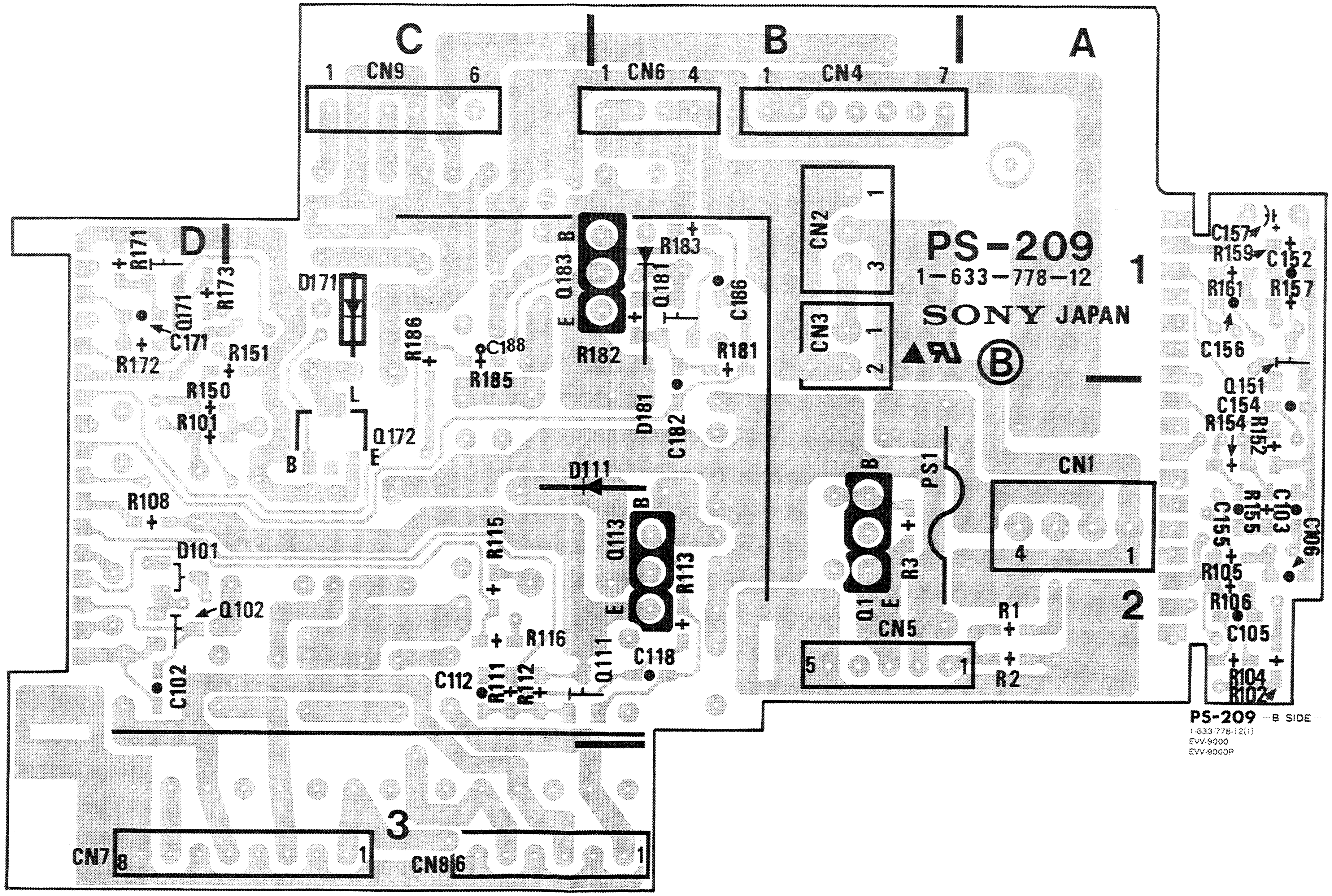
PS-209
1-633-778-12(1)
EVV-9000
EVV-9000P

A Side is the same as COMPONE


D
R163
RV221
1
D152
Q152
L172
D151
C101
C172
C153
R107
L171
L114
R156
2
L115
C104
C116
C117
C2
C3
C4
3
8

PS-209 A SIDE
1-633-778-12(1)
EVV-9000
EVV-9000P

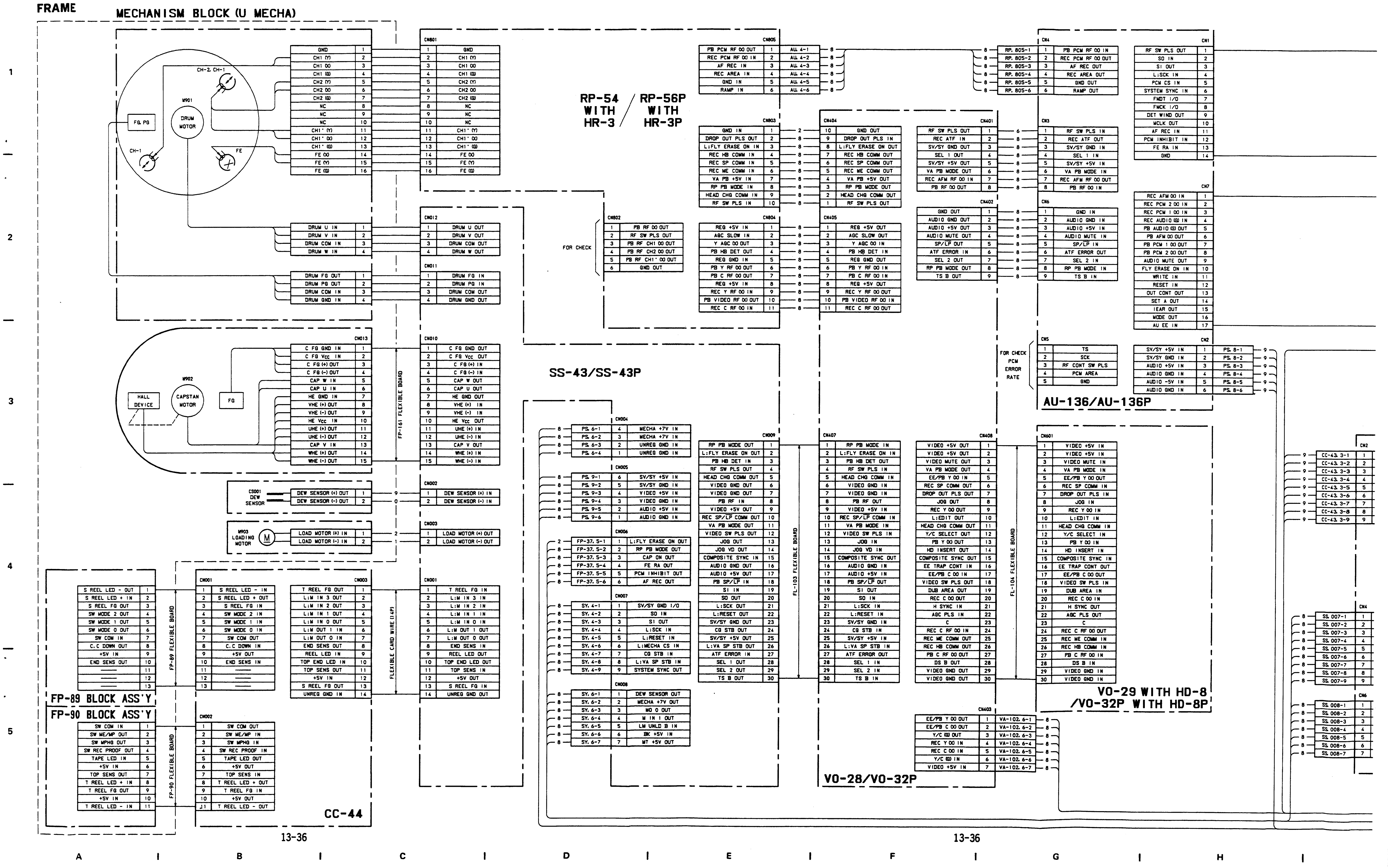
ide is the same as COMPONENT Side

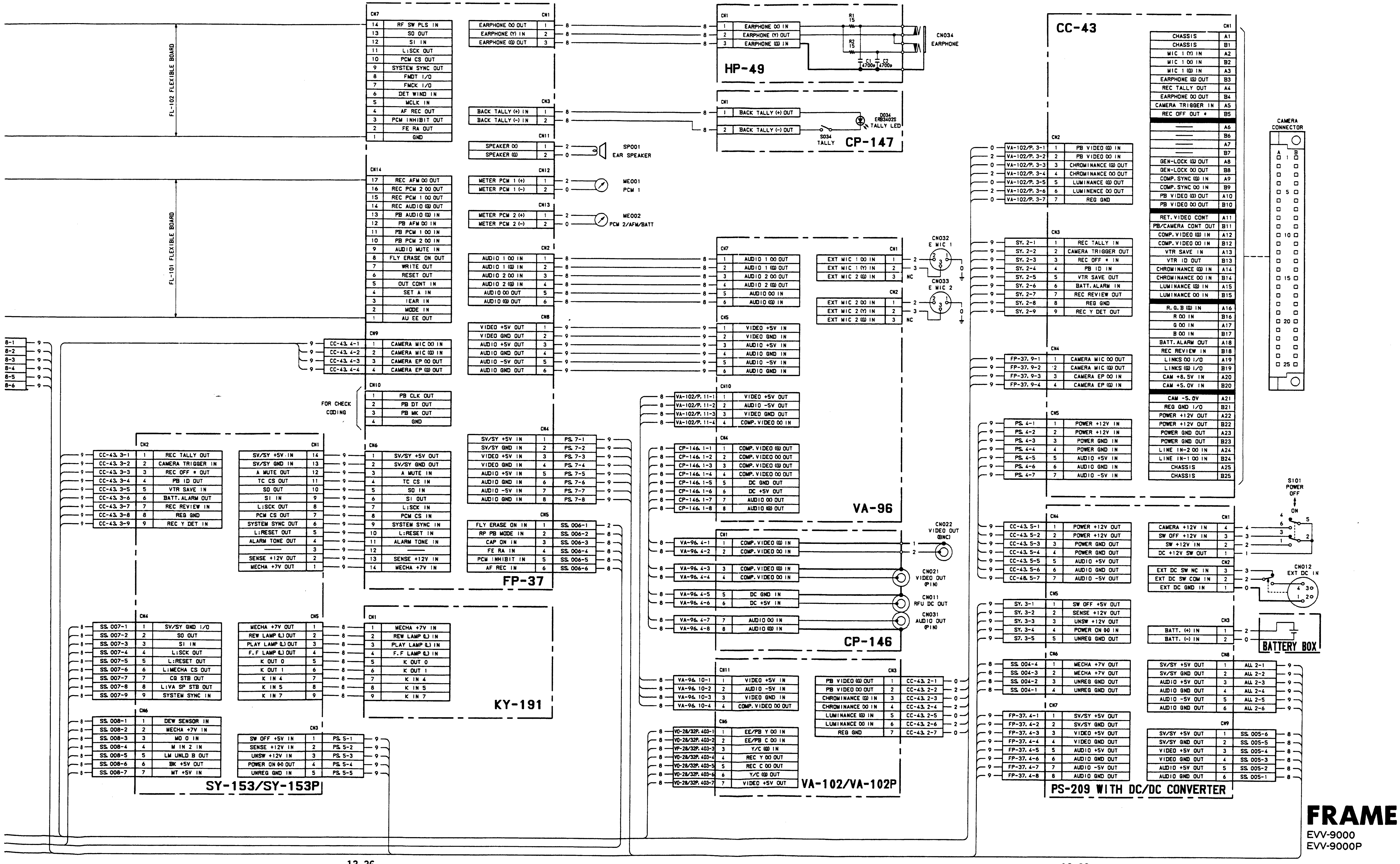

C
B
A
CN9
CN6
CN4
D
R171
R173
Q171
C171
R172
R151
R150
R101
D171
R186
C188
R185
L
Q172
B
E
Q183
R183
Q181
C186
R182
R181
D181
C182
CN2
CN3
PS-209
1-633-778-12
SONY JAPAN
1
C157
R159
C152
R161
R157
C156
Q151
C154
R154
R152
R108
D101
Q102
C102
D111
R115
Q113
R113
R116
Q111
C118
C112
R111
R112
PS1
R3
Q1
CN5
CN1
R1
R2
2
R155
C103
C155
C106
R105
R106
C105
R104
R102
CN7
CN8
3

PS-209 B SIDE
1-633-778-12(1)
EVV-9000
EVV-9000P

B Side is the same as SOLDER Side

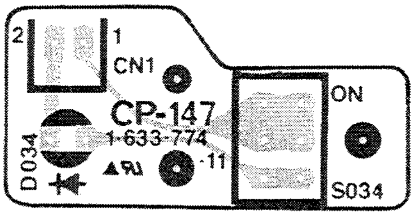
FRAME FRAME


FRAME
MECHANISM BLOCK (U MECHA)
M901 DRUM MOTOR
FG PG
CH-1
CH-2, CH-1
FE
M902 CAPSTAN MOTOR
HALL DEVICE
FG
CS001 DEW SENSOR
M903 LOADING MOTOR
CN801
CN012
CN011
CN013
CN010
CN002
CN003
CN001
FP-161 FLEXIBLE BOARD
FP-89 FLEXIBLE BOARD
FP-90 FLEXIBLE BOARD
FLEXIBLE CARD WIRE (14P)
FP-89 BLOCK ASS'Y
FP-90 BLOCK ASS'Y
CC-44
13-36
RP-54 / RP-56P
WITH / WITH
HR-3 / HR-3P
CN805
CN803
CN804
CN802
FOR CHECK
SS-43/SS-43P
CN004
CN005
CN006
CN007
CN008
CN009
FL-103 FLEXIBLE BOARD
CN404
CN405
CN401
CN402
CN407
CN408
CN403
VO-28/VO-32P
FL-104 FLEXIBLE BOARD
CN4
CN3
CN6
CN5
CN1
CN7
CN2
FOR CHECK PCM ERROR RATE
AU-136/AU-136P
CN601
VO-29 WITH HD-8
/VO-32P WITH HD-8P
CN2
CN4
CN6
1
2
3
4
5
A
B
C
D
E
F
G
H

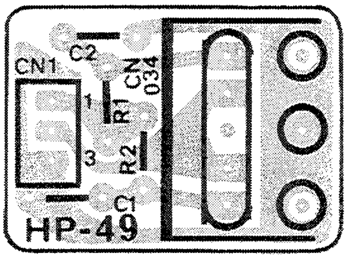

FL-102 FLEXIBLE BOARD
FL-101 FLEXIBLE BOARD
CN7
CN1
CN3
CN11
CN14
CN12
CN13
CN2
CN8
CN9
CN10
CN4
CN5
CN6
FOR CHECK CODING
SP001 EAR SPEAKER
ME001 PCM 1
ME002 PCM 2/AFM/BATT
FP-37
KY-191
SY-153/SY-153P
HP-49
CN034 EARPHONE
R1 1S
R2 1S
C1 4700p
C2 4700p
CP-147
D034 ERB3402S TALLY LED
S034 TALLY
VA-96
CN032 E MIC 1
CN033 E MIC 2
NC
CP-146
CN022 VIDEO OUT (BNC)
CN021 VIDEO OUT (PIN)
CN011 RFU DC OUT
CN031 AUDIO OUT (PIN)
VA-102/VA-102P
CC-43
CAMERA CONNECTOR
S101 POWER OFF ON
CN012 EXT DC IN
BATTERY BOX
PS-209 WITH DC/DC CONVERTER

FRAME
EVV-9000
EVV-9000P

CP-147 ; BACK TALLY LED
HP-49 ; EARPHONE JACK


2
1
CN1
CP-147
1-633-774
-11
ON
S034
D034

CP-147 A SIDE
1-633-774-11(1)
EVV-9000
EVV-9000P


C2
CN1
CN 034
1
R1
R2
3
C1
HP-49

HP-49 A SIDE
1-633-776-11(1)
EVV-9000
EVV-9000P

A Side is the same as COMPONENT Side

SECTION 14
SPARE PART AND FIXTURE

14-1. PARTS INFORMATION

(1) The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

(2) Replacement Parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to **improved parts and/or engineering changes** or **standardization of genuine parts.**
This manual's exploded views and electrical spare parts list indicate the part numbers of **the standardized genuine parts at the present.** Regarding engineering part changes by the engineering department, refer to Sony service bulletins and service manual supplements.

(3) The parts marked with s in the SP column of the exploded views and electrical spare parts lists are normally stocked for replacement purposes. The parts marked with o in the SP column are not normally required for routine service work. Orders for parts marked with o will be processed, but allow for additional delivery time.

(4) Items with no part number and/or no description are not stocked because they are seldom required for routine service.

(5) (T) after a spring description is shown on the exploded views in order to indicate the number of spring turns required for the use.
.Example
Spring, tension (24T); This spring must be cut at its 24th turn for actual use.

(6) All capacitors are in micro farads unless otherwise specified.
All inductors are in micro henries unless otherwise specified.
All resistors are in ohms.

14-2. EXPLODED VIEWS

- Exploded views are composed of the following blocks.

(1) Threading Drive Block
    Coaster Blocks
    Drive Gears
    Threading Lever

(2) Reel Table Block and Tension Regulator
    Tension Regulator Arm
    Tension Regulator Band
    S Reel Table
    T Reel Table

(3) Head Drum and Cassette-up Compartment
    Threading Motor (Loading)

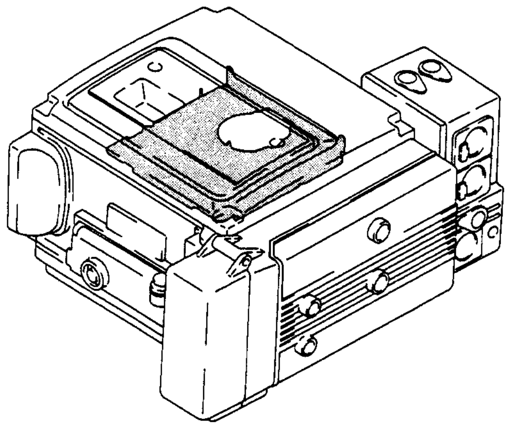
(4) Printed Circuit Boards (Mechanical Deck) and Chassis Block
    RP Cover

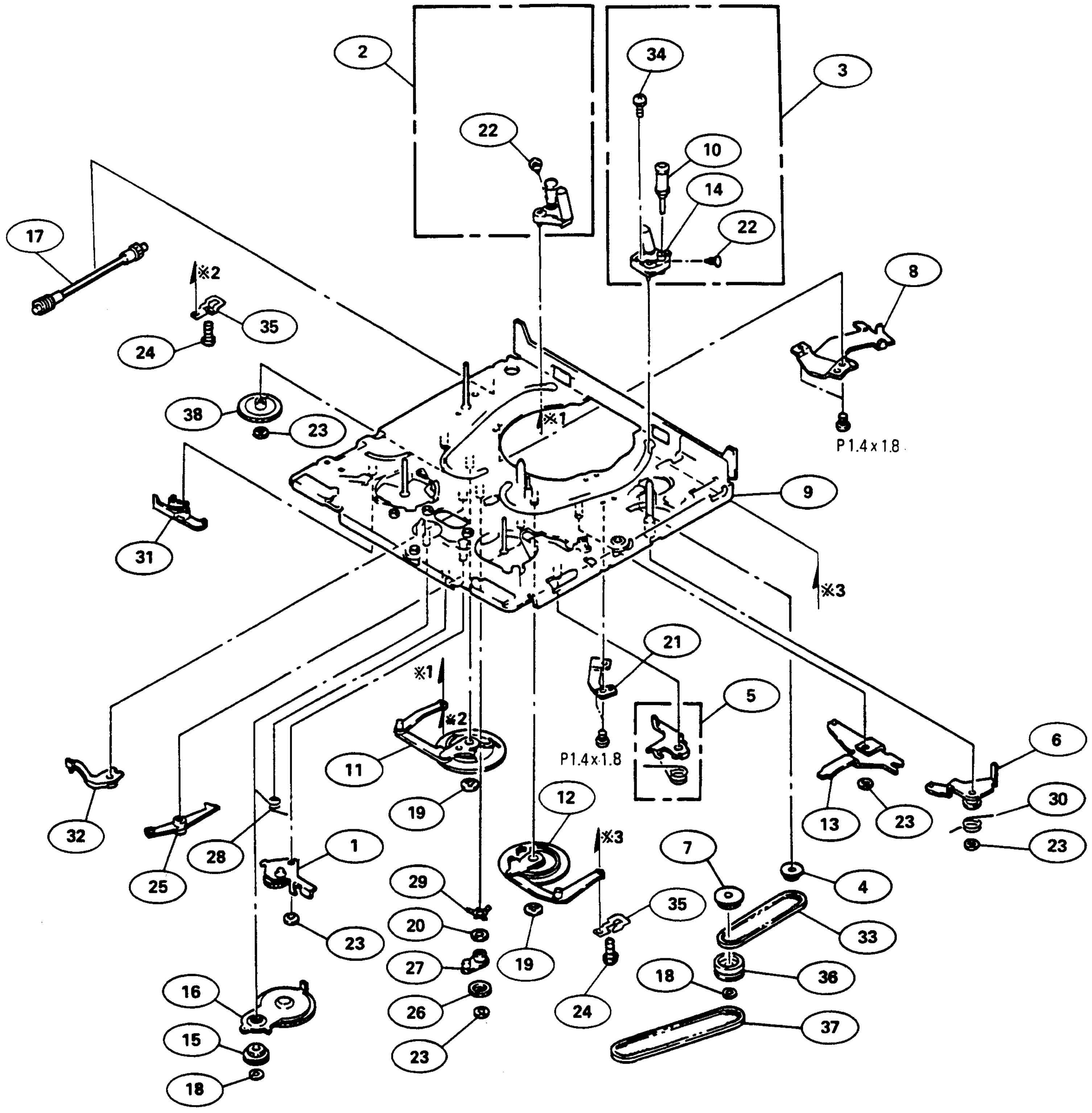
(5) Ornamental Block
    Key Board
    Side Plate (L)
    Cassette Lid

(6) Display Panel Block
    Switch Knob
    Side Plate (R)
    Slide Knob

(7) Battery Case and Connector Box

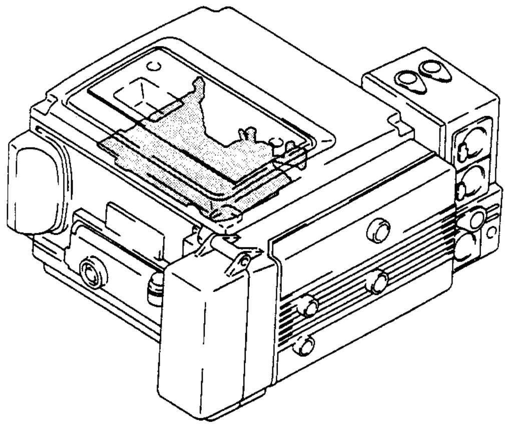
Threading Drive Block

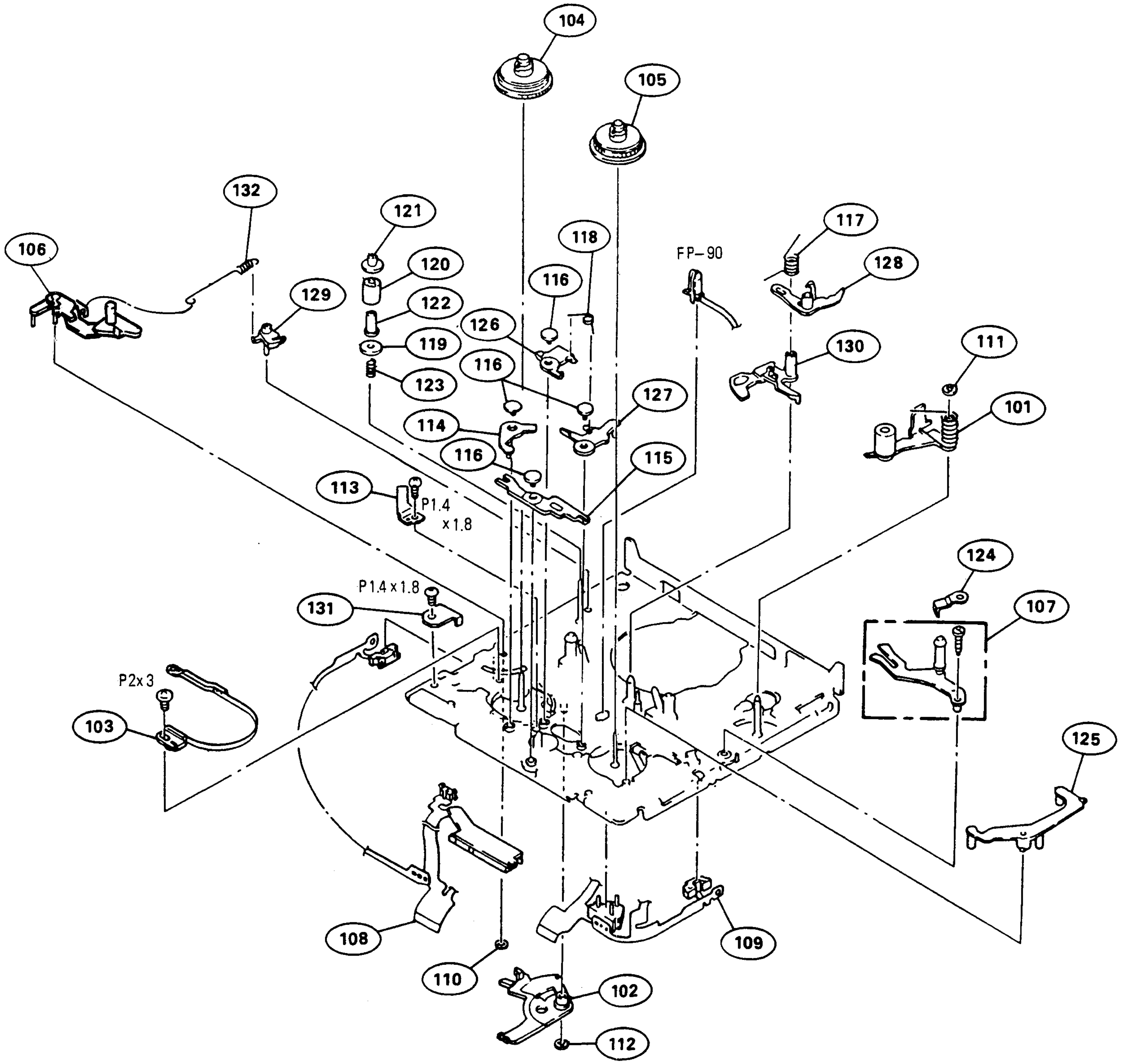




No.	Part No.	SP	Discription
1	A-7040-130-A	s	GEAR BLOCK ASSY, LB
2	A-7040-204-A	s	COASTER (LEFT) BLOCK ASSY
3	A-7040-220-A	s	COASTER (RIGHT) BLOCK ASSY
4	X-3726-805-1	s	GEAR ASSY, JOINT
5	X-3726-808-2	s	BRAKE ASSY,TS
6	X-3726-824-1	s	ARM ASSY, PINCH SUB
7	X-3726-838-1	s	PULLEY (UPPER) ASSY, MIDWAY
8	X-3726-841-1	s	REINFORCEMENT (SS) ASSY
9	X-3728-801-1	o	CHASSIS ASSY, MECHANICAL
10	X-3728-810-1	s	ROLLER ASSY (U), GUIDE
11	X-3728-842-1	s	GEAR (LEFT) ASSY, DRIVE
12	X-3728-843-1	s	GEAR (RIGHT) ASSY, DRIVE
13	X-3728-846-1	s	LEVER ASSY, THREADING
14	X-3728-852-1	s	COASTER (RIGHT) ASSY
15	X-3728-858-1	s	GEAR ASSY, RC
16	X-3728-866-1	s	GEAR ASSY, RK
17	X-3728-868-1	s	WORM ASSY
18	3-321-393-11	s	WASHER, STOPPER
19	3-669-465-00	s	WASHER (1.5), STOPPER
20	3-701-436-21	s	WASHER, POLYEHTHYLENE
21	3-726-805-01	o	REINFORCEMENT (TT)
22	3-726-822-01	s	SCREW (M1.4×2)(STEP), HEAD
23	3-726-829-01	s	WASHER, STOPPER
24	3-726-830-01	s	SCREW (M1.4×4)(THREE LOCK)
25	3-726-854-01	s	ARM, BRAKE RELEASE
26	3-726-856-02	s	GEAL, UL
27	3-726-857-02	s	ARM, UL
28	3-726-865-01	s	SPRING (LB), TORSION
29	3-726-867-01	s	SPRING, LEAF
30	3-726-895-01	s	SPRING
31	3-728-842-01	s	LEVER, EJECT
32	3-728-851-01	s	BRAKE, UL
33	3-728-866-11	s	BELT (S), TIMING
34	3-736-473-01	s	SCREW (W2)(THREE LOCK)
35	3-736-485-01	s	SPRING, LEAF
36	3-741-196-01	s	PULLEY (LOWER) BELT, MIDWAY
37	3-741-197-01	s	BELT (L), TIMING
38	3-744-109-01	s	GEAR, WHEEL

Reel Table Block and Tension Regulator

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116
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113
P1.4
x1.8
124
P1.4x1.8
131
107
P2x3
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125
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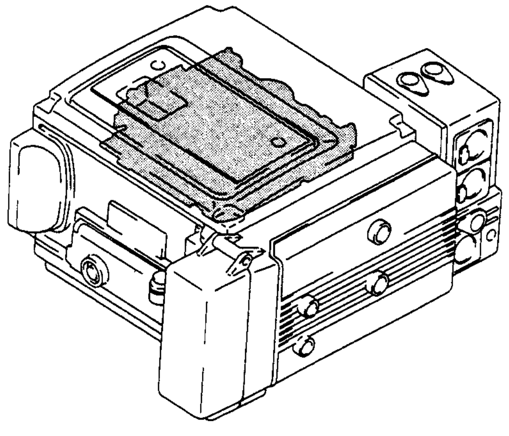
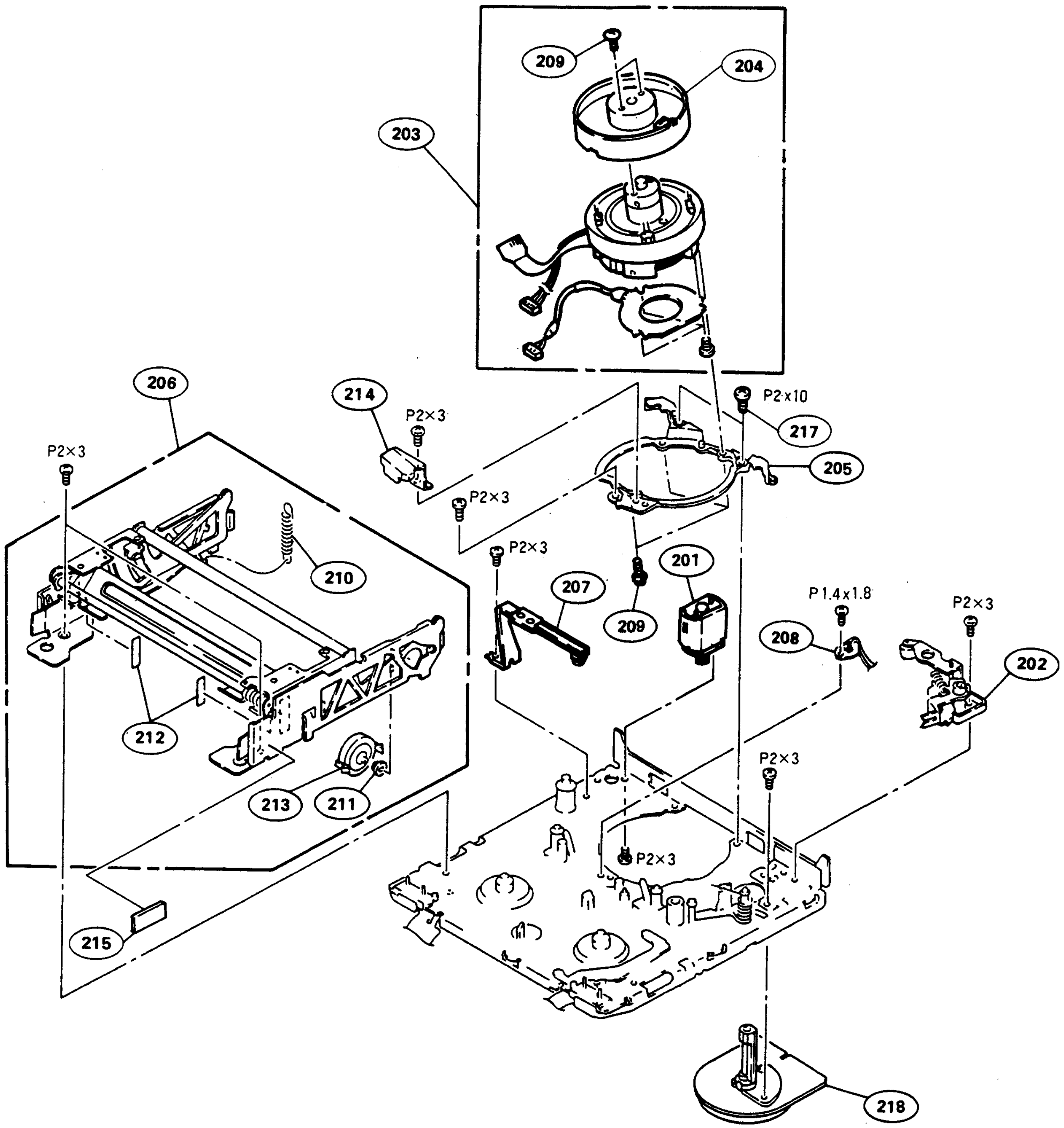
110
102
112

No.	Part No.	SP	Discription
101	A-7040-219-A	s	ARM BLOCK ASSY, PINCH
102	X-3726-806-2	s	LEVER ASSY, SW
103	X-3726-809-2	s	BAND ASSY, TENSION REGULATOR
104	X-7328-851-1	s	TABLE ASSY, REEL, S
105	X-3728-855-1	s	TABLE ASSY, REEL, T
106	X-3728-867-1	s	ARM ASSY (S), TENSION REGULATOR
107	X-3728-869-1	s	ARM ASSY, TG7
108	1-628-060-12	s	PRINTED CIRCUIT BOARD, FP-89 FLEXIBLE
109	1-628-061-12	s	PRINTED CIRCUIT BOARD, FP-90 FLEXIBLE
110	3-321-393-11	s	WASHER, STOPPER
111	3-699-465-00	s	WASHER (1.5), STOPPER
112	3-726-829-01	s	WASHER, STOPPER
113	3-726-848-01	s	RETAINER, TL
114	3-726-852-01	s	BRAKE, LB
115	3-726-853-01	s	LEVER, LB
116	3-726-858-01	s	PIN, SHAFT RETAINER
117	3-726-864-01	s	SPRING (RK),TORSION
118	3-726-866-01	s	SPRING (ST), TORSION
119	3-726-882-02	s	FLANGE, LOWER, TG2
120	3-726-883-01	s	ROLLER, TG2
121	3-726-884-01	s	FLANGE, UPPER, TG2
122	3-726-885-01	s	SLEEVE, TG2
123	3-726-886-01	s	SPRING, COMPRESSION
124	3-728-808-01	s	SPRING, LEAF
125	3-728-848-01	s	ARM, LB RELEASE
126	3-728-849-01	s	BRAKE, S
127	3-728-850-01	s	BRAKE, T
128	3-728-852-02	s	ARM, RK STOPPER
129	3-728-855-03	s	ARM, ADJUSTMENT
130	3-728-875-01	s	STOPPER, RK
131	3-730-125-01	s	RETAINER, SW
132	3-736-414-01	s	SPRING, TENSION

Head Drum and Cassette-Up Compartment

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214
P2×3
P2×3
P2x10
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P2×3
P2×3
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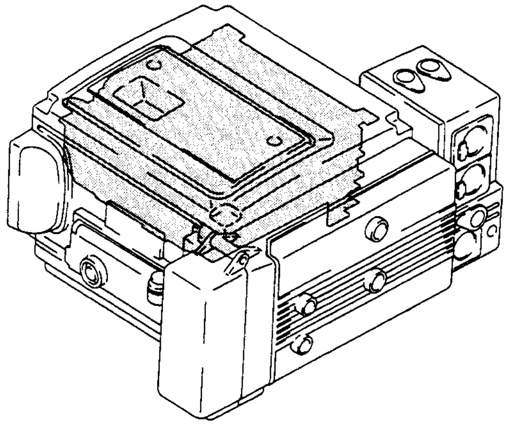
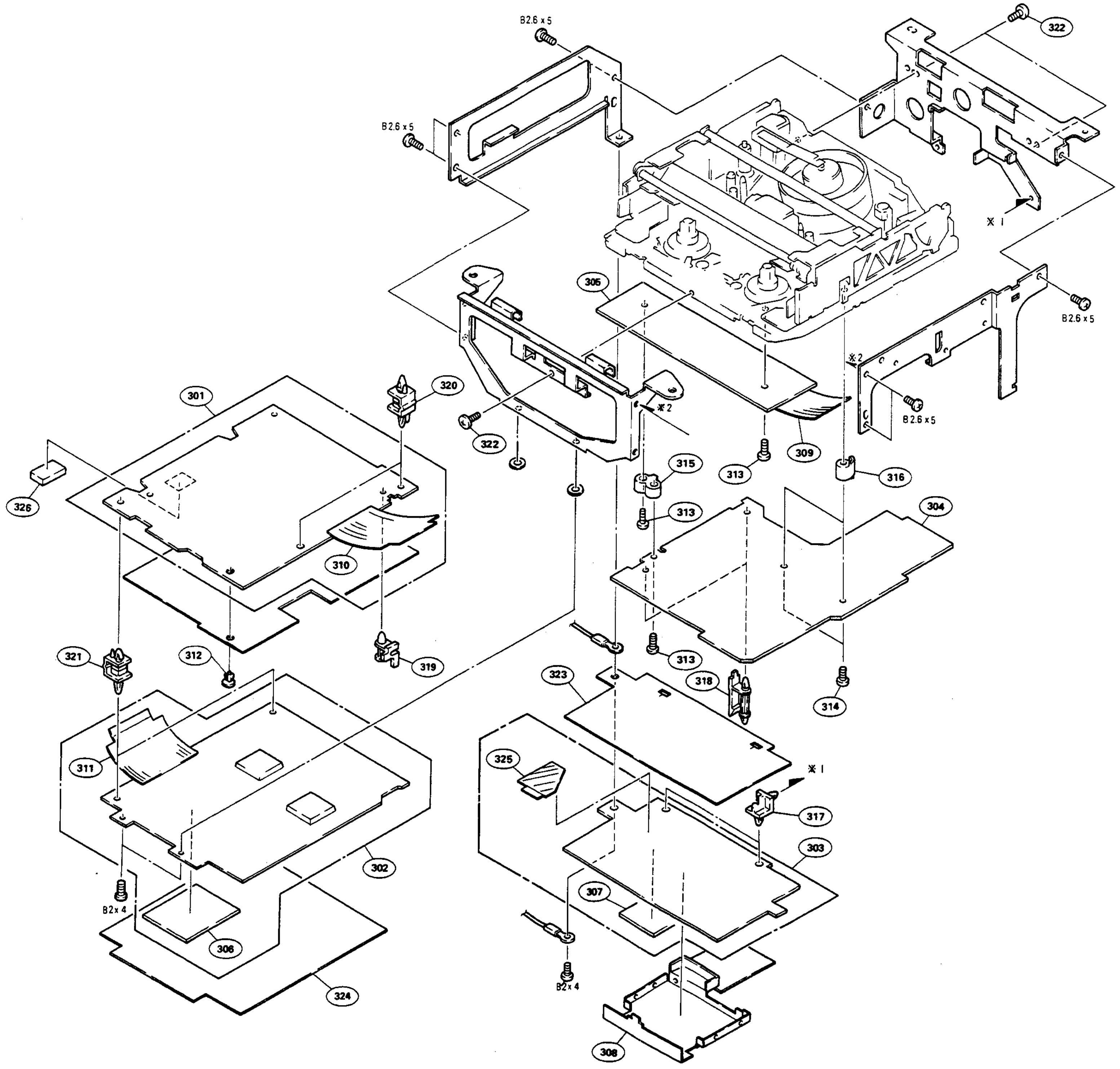
P1.4x1.8
P2×3
208
202
212
213
211
P2×3
P2×3
215
218

No.	Part No.	SP	Discription
201	A-7040-160-A	s	MOTOR ASSY, THREADING (LOADING)(M903)
202	A-7040-161-B	s	ROLLER BLOCK ASSY, HC
203	A-7048-297-A	s	DRUM ASSY (DGU-50A-R)
204	A-7049-267-A	s	DRUM ASSY, ROTARY (UPPER)(DGR-50-R)
205	X-3686-474-1	s	DRUM ASSY, BASE
206	X-3726-892-1	s	CASSETTE COMPARTMENT ASSY
207	X-3728-864-1	s	TERMINAL, SHAFT EARTH
208	1-808-505-12	s	SENSOR (DEW)
209	3-684-493-01	s	SCREW +P (M2×5)
210	3-728-825-03	s	SPRING, TENSION
211	3-728-828-02	s	GEAR, DAMPER
212	3-728-829-01	o	TAPE
213	3-728-867-02	s	DAMPER, OIL
214	3-728-868-01	s	GUARD, GUIDE
215	3-730-176-11	o	SHEET, MD
217	3-736-406-01	s	SCREW (3)(+P2×10)
218	8-835-331-01	s	MOTOR, DC U-22A

Printed Circuit Boards and Chassis Block

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312
319
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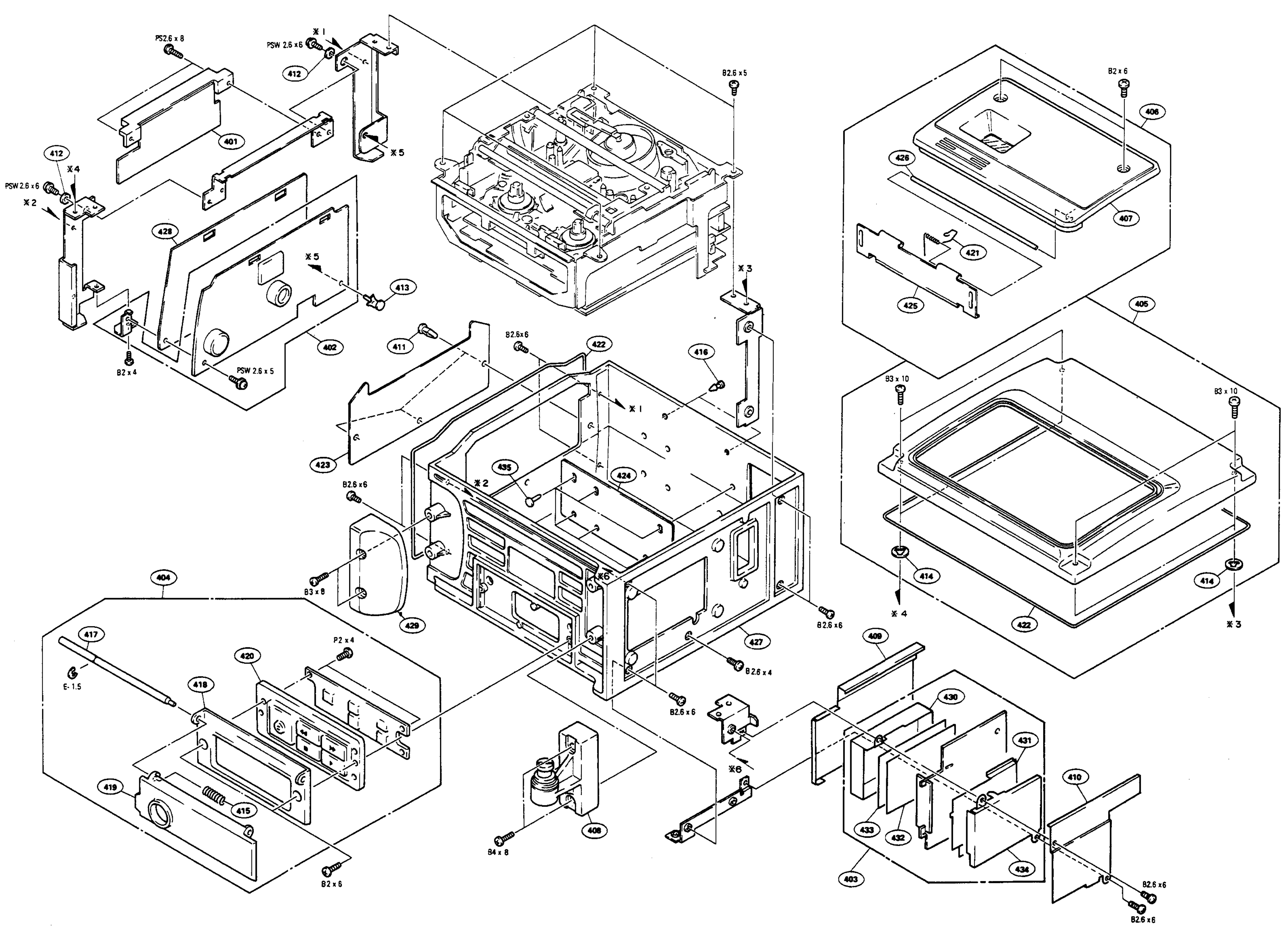
314
323
※1
311
325
317
303
302
B2x4
307
306
324
B2x4
308

No.	Part No.	SP	Discription
301	A-7062-157-A	o	MOUNTED CIRCUIT BOARD, VO-32P
302	A-7062-158-A	o	MOUNTED CIRCUIT BOARD, VO-33P
303	A-7062-159-A	o	MOUNTED CIRCUIT BOARD, RP-56P
304	A-7062-160-A	o	MOUNTED CIRCUIT BOARD, SS-43P
305	A-7062-028-A	o	MOUNTED CIRCUIT BOARD, CC-44
306	A-7068-154-A	s	MOUNTED CIRCUIT BOARD, HD-8P
307	A-7068-155-A	s	MOUNTED CIRCUIT BOARD, HR-3P
308	X-3744-315-1	o	COVER ASSY, RP
309	1-575-620-11	o	WIRE, FLEXIBLE CARD
310	1-633-819-11	o	PRINTED CIRCUIT BOARD, FL-103 FLEXIBLE
311	1-633-820-11	o	PRINTED CIRCUIT BOARD, FL-104 FLEXIBLE
312	3-531-576-01	s	RIVET
313	3-713-790-01	s	SCREW (M2×5), TAPPING, P3
314	3-713-790-31	s	SCREW (M2×8), TAPPING, P3
315	3-732-766-01	s	SPACER (A), PC BOARD
316	3-732-767-01	s	SPACER (B), PC BOARD
317	3-732-776-01	o	HINGE (C), PC BOARD
318	3-732-777-01	o	SUPPORT (A), PC BOARD
319	3-732-778-01	o	SUPPORT (B), PC BOARD
320	3-732-779-01	o	HINGE (A), PC BOARD
321	3-732-780-01	o	HINGE (B), PC BOARD
322	3-732-791-01	s	SCREW (M2×3)
323	3-744-346-01	o	SHEET, INSULATING, RP
324	3-744-349-01	o	SHIELD, VO
325	3-744-353-01	o	PLATE, SHIELD, D.F
326	9-911-840-99	s	SPACER (D)

Ornamental Block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B2 x 4
PSW 2.6 x 5
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B2.6x6
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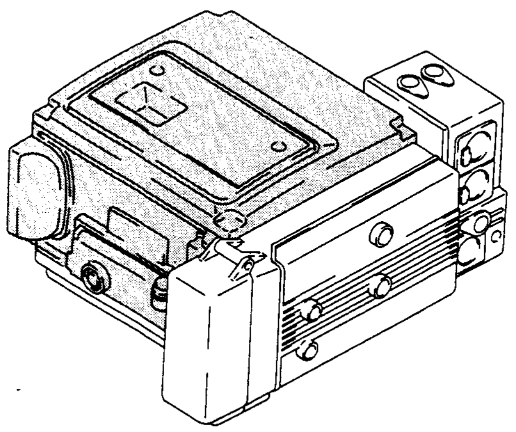
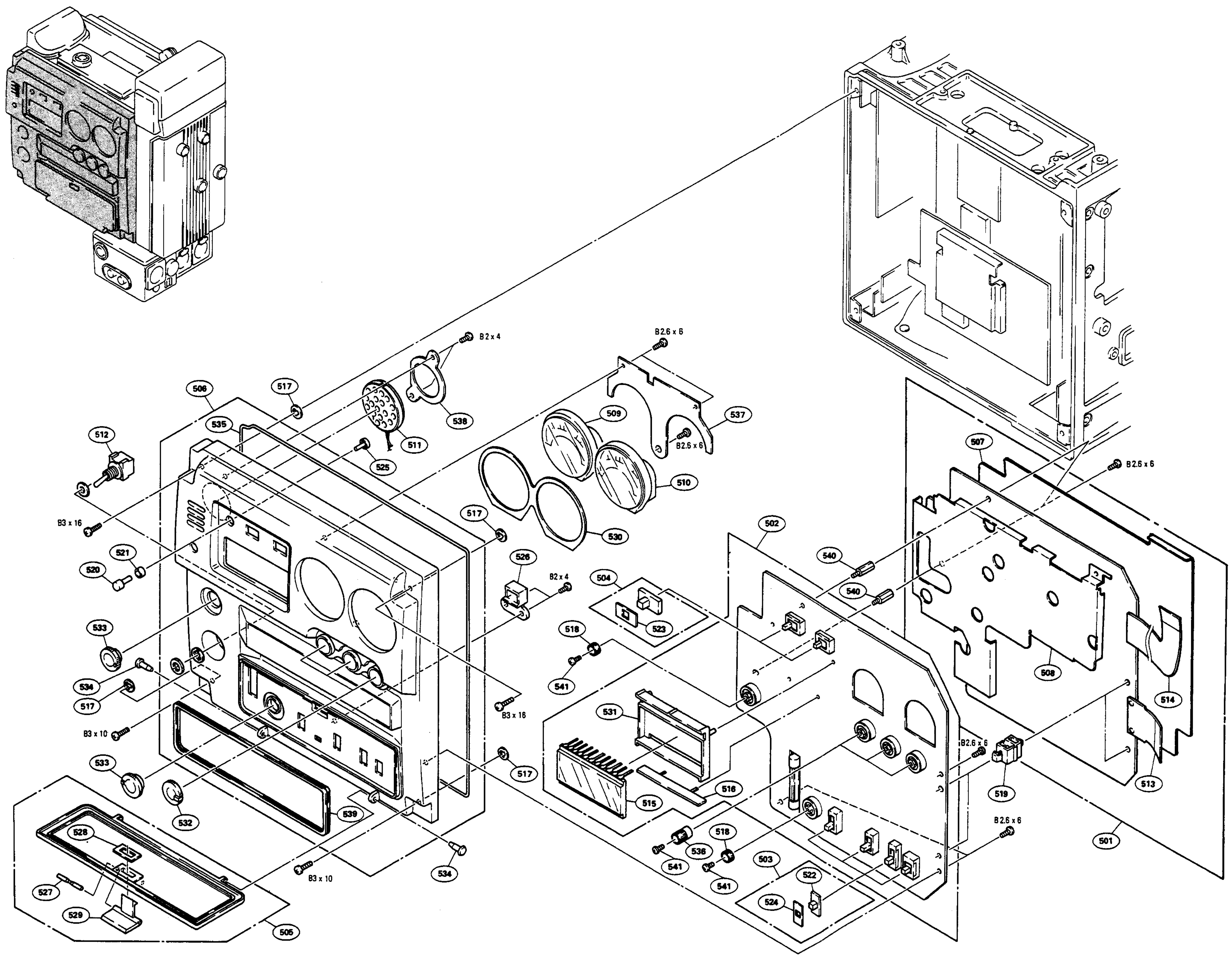


No.	Part No.	SP	Discription
401	A-7062-027-A	o	MOUNTED CIRCUIT BOARD, CC-43
402	A-7062-162-A	o	MOUNTED CIRCUIT BOARD, SY-153P
403	A-7062-032-A	o	MOUNTED CIRCUIT BOARD, PS-209
404	A-7081-078-A	s	KEY BOARD ASSY
405	A-7081-079-A	o	PLATE (L) ASSY, SIDE
406	A-7081-083-A	o	LID ASSY, CASSETTE
407	X-3744-302-6	s	LID ASSY, CASSETTE
408	X-3744-310-1	s	SUPPORT ASSY, BELT
409	X-3744-316-1	o	COVER ASSY (1), PS
410	X-3744-317-1	o	COVER ASSY (2), PS
411	2-249-250-00	s	CLIP (SMALL), CANOE
412	3-325-028-01	s	COLLAR, EJECT
413	3-531-576-01	s	RIVET
414	3-669-596-00	s	WASHER (2.3), STOPPER
415	3-673-281-00	o	SPRING, COMPRESSION
416	3-676-379-00	s	BUSHING (M5), SCREW
417	3-717-854-01	o	SHAFT, KEY BOARD COVER
418	3-718-042-21	o	FRAME, KEY BOARD
419	3-718-043-21	o	COVER, KEY BOARD
420	3-718-044-01	s	COVER, KEY BOARD RUBBER
421	3-721-174-01	s	SPRING, TORSION
422	3-729-701-31	s	RUBBER (CARBON), CONDUCTIVE
423	3-744-302-01	o	COVER, FRAME
424	3-744-307-02	o	PROTECTOR, HARNESS
425	3-744-314-02	s	DOOR, CASSETTE
426	3-744-315-01	s	SHAFT, DOOR
427	3-744-343-01	o	FRAME
428	3-744-351-01	o	PROTECTOR, SY
429	3-744-356-01	o	PLATE, CONNECTION
430	3-744-371-01	o	CASE, SHIELD (2), PS
431	3-744-372-01	o	INSULATING SHEET (1), PS
432	3-744-373-01	o	INSULATING SHEET (2), PS
433	3-744-379-01	o	PLATE, SHIELD (AL)
434	3-744-382-01	o	CASE, SHIELD (1), PS
435	4-812-134-00	s	RIVET NYLON, 3.5ϕ

Display Panel Block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B3 x 10
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B2.6 x 6
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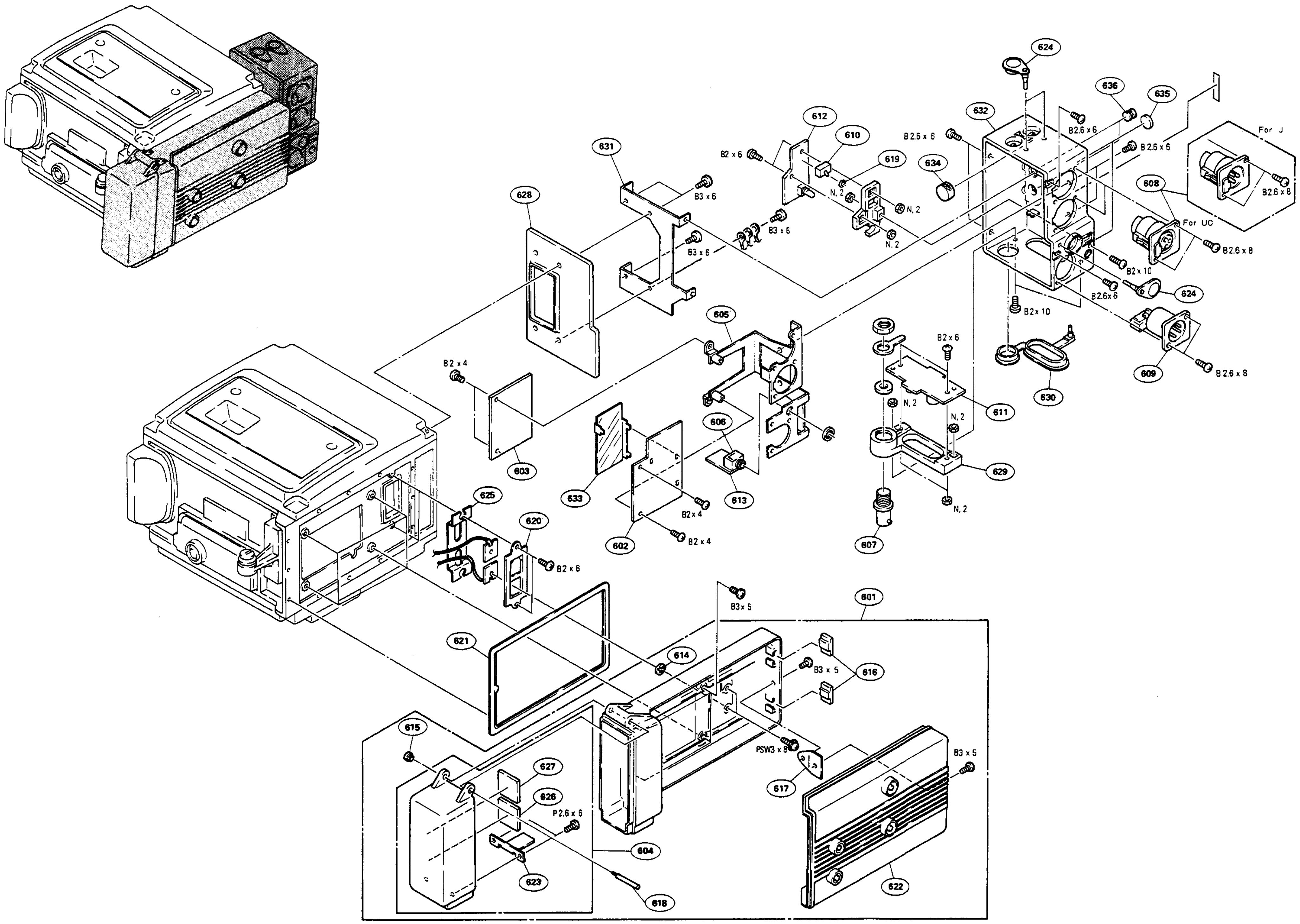
No.	Part No.	SP	Discription
501	A-7062-161-A	o	MOUNTED CIRCUIT BOARD, AU-136P
502	A-7062-029-A	o	MOUNTED CIRCUIT BOARD, FP-37
503	X-3717-784-1	s	KNOB (A) ASSY, SW
504	X-3744-304-1	s	KNOB ASSY, SLIDE
505	X-3744-305-1	s	COVER ASSY, SIDE PLATE (R)
506	X-3744-309-1	o	PLATE (R) SUB ASSY, SIDE
507	X-3744-314-1	o	SHIELD ASSY, AU
508	X-3744-318-1	o	SHIELD (1) (UPPER) ASSY, AU
509	1-520-495-11	s	METER, LEVEL
510	1-520-495-21	s	METER, LEVEL
511	1-544-312-11	s	SPEAKER (DIA.20)
512	1-552-504-00	s	SWITCH, TOGGLE
513	1-633-817-11	o	PRINTED CIRCUIT BOARD, FL-101 FLEXIBLE
514	1-633-818-11	o	PRINTED CIRCUIT BOARD, FL-102 FLEXIBLE
515	1-807-981-11	s	DISPLAY PANEL, LIQUID CRYSTAL
516	1-808-016-11	s	LED MODULE
517	3-669-596-00	s	WASHER (2.3), STOPPER
518	3-676-088-00	o	SHAFT, KNOB
519	3-682-080-00	o	HINGE (A), PCB
520	3-686-084-01	s	PUSH BUTTON
521	3-686-086-01	s	CUSHION, BUTTON
522	3-717-900-01	s	KNOB (A) (TC), SW
523	3-717-902-01	o	PLATE, ORNAMENTAL
524	3-717-902-11	o	PLATE, ORNAMENTAL
525	3-717-931-01	s	PIN, PUSH BUTTON
526	3-717-939-01	o	STOPPER, TC LID
527	3-717-940-01	s	SHAFT, TC LEVER
528	3-717-941-01	s	RUBBER, TC LEVER
529	3-717-942-01	s	LEVER, TC
530	3-718-132-01	o	SHEET, METER DROP PROTECTION
531	3-719-182-11	o	HOLDER, LCD
532	3-724-754-02	s	KNOB (R), VR
533	3-724-755-03	s	KNOB (F), VR
534	3-724-756-01	o	SHAFT, DOOR
535	3-729-701-02	s	RUBBER (CARBON), CONDUCTIVE
536	3-744-304-01	s	KNOB (SUPPORT)
537	3-744-310-01	o	BRACKET, METER
538	3-744-311-01	o	HOLDER, SP
539	3-744-327-01	s	RUBBER, DROP PROTECTION
540	3-744-366-01	o	SUPPORT
541	7-627-552-37	s	SCREW, PRECISION +P1.7×3

Battery Case and Connector Box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PSW3 x 8
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B3 x 5
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No.	Part No.	SP	Discription
601	A-6703-651-C	s	CASE ASSY, BATTERY
602	A-7062-031-A	o	MOUNTED CIRCUIT BOARD, VA-96
603	A-7062-163-A	o	MOUNTED CIRCUIT BOARD, VA-102P
604	A-3717-701-3	o	COVER ASSY, TOP, BATTERY
605	X-3744-306-1	o	CHASSIS ASSY, C.B
606	1-507-980-11	o	JACK
607	1-561-781-11	s	CONNECTOR, BNC (RECEPTACLE)
608	1-563-029-21	o	CONNECTOR, (RECEPTACLE) 3P
609	1-564-603-11	s	CONNECTOR, (WITH DC SW) 4P
610	1-570-608-11	s	SWITCH, TOGGLE
611	1-633-773-11	o	PRINTED CIRCUIT BOARD, CP-146
612	1-633-774-11	o	PRINTED CIRCUIT BOARD, CP-147
613	1-633-776-11	o	PRINTED CIRCUIT BOARD, HP-49
614	3-669-596-00	s	WASHER (2.3), STOPPER
615	3-703-075-00	s	CAP 2, SHAFT
616	3-717-707-02	o	CUSHION (2)
617	3-717-708-01	o	RETAINER, CASE
618	3-717-709-01	o	SHAFT, LID
619	3-717-825-01	o	RING, O
620	3-718-028-01	o	HOLDER, TERMINAL
621	3-718-032-01	s	SHEET, RUBBER, DROP PROTECTION
622	3-718-040-01	o	COVER (1), BATTERY CASE
623	3-718-172-01	o	RETAINER, HOOK
624	3-724-730-02	s	RUBBER (EA), DROP PROTECTION
625	3-729-009-03	o	INSULATOR (BATT)
626	3-729-720-01	o	CUSHION (LEFT)
627	3-729-721-01	o	CUSHION (RIGHT)
628	3-744-326-01	o	COVER, C BOX
629	3-744-333-01	o	HOLDER, PIN JACK
630	3-744-334-01	s	RUBBER (PJ), DROP PROTECTION
631	3-744-337-01	o	COVER (SUPPORT), C BOX
632	3-744-342-01	o	BOX, C
633	3-744-352-01	o	SHIELD, VA
634	3-744-365-01	o	FILTER
635	4-872-529-00	s	FOOT, RUBBER
636	4-887-737-01	s	CAP, RUBBER

14-3. ELECTRICAL PARTS LIST

CAPACITOR, CHIP CERAMIC

Part No.	SP	Description
1-163-085-00	s	CAP, CHIP CERAMIC 2pF +-0.25pF 50V
1-163-093-00	s	CAP, CHIP CERAMIC 10pF 5% 50V
1-163-097-00	s	CAP, CHIP CERAMIC 15pF 5% 50V
1-163-101-00	s	CAP, CHIP CERAMIC 22pF 5% 50V
1-163-105-00	s	CAP, CHIP CERAMIC 33pF 5% 50V
1-163-109-00	s	CAP, CHIP CERAMIC 47pF 5% 50V
1-163-117-00	s	CAP, CHIP CERAMIC 100pF 5% 50V
1-163-125-00	s	CAP, CHIP CERAMIC 220pF 5% 50V
1-163-129-00	s	CAP, CHIP CERAMIC 330pF 5% 50V
1-163-133-00	s	CAP, CHIP CERAMIC 470pF 5% 50V
1-163-137-00	s	CAP, CHIP CERAMIC 680pF 5% 50V
1-163-141-00	s	CAP, CHIP CERAMIC 1000pF 5% 50V
1-163-017-00	s	CAP, CHIP CERAMIC 4700pF 10% 50V
1-163-019-00	s	CAP, CHIP CERAMIC 6800pF 10% 50V
1-163-035-00	s	CAP, CHIP CERAMIC 0.047 50V
1-163-038-00	s	CAP, CHIP CERAMIC 0.1 50V

CAPACITOR, CHIP TANTALUM

Part No.	SP	Description
1-135-070-00	s	CAP, CHIP TANTALUM 0.1 10% 35V
1-135-072-21	s	CAP, CHIP TANTALUM 0.22 10% 35V

RESISTOR, CHIP

Part No.	SP	Description
1-216-295-00	s	RES, CHIP 0 5% 1/10W
1-216-298-00	s	RES, CHIP 2.2 5% 1/10W
1-216-005-00	s	RES, CHIP 15 5% 1/10W
1-216-009-00	s	RES, CHIP 22 5% 1/10W
1-216-025-00	s	RES, CHIP 100 5% 1/10W
1-216-027-00	s	RES, CHIP 120 5% 1/10W
1-216-029-00	s	RES, CHIP 150 5% 1/10W
1-216-031-00	s	RES, CHIP 180 5% 1/10W
1-216-035-00	s	RES, CHIP 270 5% 1/10W
1-216-037-00	s	RES, CHIP 330 5% 1/10W
1-216-039-00	s	RES, CHIP 390 5% 1/10W
1-216-041-00	s	RES, CHIP 470 5% 1/10W
1-216-043-00	s	RES, CHIP 560 5% 1/10W
1-216-045-00	s	RES, CHIP 680 5% 1/10W
1-216-047-00	s	RES, CHIP 820 5% 1/10W
1-216-049-00	s	RES, CHIP 1k 5% 1/10W
1-216-051-00	s	RES, CHIP 1.2k 5% 1/10W
1-216-053-00	s	RES, CHIP 1.5k 5% 1/10W
1-216-055-00	s	RES, CHIP 1.8k 5% 1/10W
1-216-057-00	s	RES, CHIP 2.2k 5% 1/10W
1-216-059-00	s	RES, CHIP 2.7k 5% 1/10W
1-216-061-00	s	RES, CHIP 3.3k 5% 1/10W
1-216-063-00	s	RES, CHIP 3.9k 5% 1/10W
1-216-065-00	s	RES, CHIP 4.7k 5% 1/10W
1-216-067-00	s	RES, CHIP 5.6k 5% 1/10W
1-216-069-00	s	RES, CHIP 6.8k 5% 1/10W
1-216-071-00	s	RES, CHIP 8.2k 5% 1/10W
1-216-073-00	s	RES, CHIP 10k 5% 1/10W
1-216-075-00	s	RES, CHIP 12k 5% 1/10W
1-216-077-00	s	RES, CHIP 15k 5% 1/10W
1-216-079-00	s	RES, CHIP 18k 5% 1/10W
1-216-081-00	s	RES, CHIP 22k 5% 1/10W
1-216-083-00	s	RES, CHIP 27k 5% 1/10W
1-216-085-00	s	RES, CHIP 33k 5% 1/10W
1-216-087-00	s	RES, CHIP 39k 5% 1/10W
1-216-089-00	s	RES, CHIP 47k 5% 1/10W
1-216-091-00	s	RES, CHIP 56k 5% 1/10W
1-216-093-00	s	RES, CHIP 68k 5% 1/10W
1-216-095-00	s	RES, CHIP 82k 5% 1/10W
1-216-097-00	s	RES, CHIP 100k 5% 1/10W
1-216-099-00	s	RES, CHIP 120k 5% 1/10W
1-216-101-00	s	RES, CHIP 150k 5% 1/10W
1-216-105-00	s	RES, CHIP 220k 5% 1/10W
1-216-109-00	s	RES, CHIP 330k 5% 1/10W
1-216-113-00	s	RES, CHIP 470k 5% 1/10W
1-216-115-00	s	RES, CHIP 560k 5% 1/10W
1-216-117-00	s	RES, CHIP 680k 5% 1/10W
1-216-121-00	s	RES, CHIP 1.0M 5% 1/10W

CONNECTOR

Part No.	SP	Description	
1-506-467-11	o	RECEPTACLE	2P MALE (STRAIGHT TYPE)
1-506-481-11	o	RECEPTACLE	2P MALE (ANGLE TYPE)
1-562-147-11	o	HOUSING	2P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32
1-506-468-11	o	RECEPTACLE	3P MALE (STRAIGHT TYPE)
1-506-482-11	o	RECEPTACLE	3P MALE (ANGLE TYPE)
1-562-148-11	o	HOUSING	3P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32
1-506-469-11	o	RECEPTACLE	4P MALE (STRAIGHT TYPE)
1-506-483-21	o	RECEPTACLE	4P MALE (ANGLE TYPE)
1-562-149-11	o	HOUSING	4P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32
1-506-470-11	o	RECEPTACLE	5P MALE (STRAIGHT TYPE)
1-506-484-11	o	RECEPTACLE	5P MALE (ANGLE TYPE)
1-562-150-11	o	HOUSING	5P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32
1-506-471-31	o	RECEPTACLE	6P MALE (STRAIGHT TYPE)
1-506-485-11	o	RECEPTACLE	6P MALE (ANGLE TYPE)
1-562-151-11	o	HOUSING	6P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32
1-506-472-11	o	RECEPTACLE	7P MALE (STRAIGHT TYPE)
1-506-486-11	o	RECEPTACLE	7P MALE (ANGLE TYPE)
1-562-152-11	o	HOUSING	7P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32
1-506-473-11	o	RECEPTACLE	8P MALE (STRAIGHT TYPE)
1-506-487-11	o	RECEPTACLE	8P MALE (ANGLE TYPE)
1-562-153-11	o	HOUSING	8P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32
1-506-474-11	o	RECEPTACLE	9P MALE (STRAIGHT TYPE)
1-506-488-11	o	RECEPTACLE	9P MALE (ANGLE TYPE)
1-562-154-11	o	HOUSING	9P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32
1-506-475-11	o	RECEPTACLE	10P MALE (STRAIGHT TYPE)
1-506-489-11	o	RECEPTACLE	10P MALE (ANGLE TYPE)
1-562-155-11	o	HOUSING	10P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32
1-506-476-11	o	RECEPTACLE	11P MALE (STRAIGHT TYPE)
1-506-490-21	o	RECEPTACLE	11P MALE (ANGLE TYPE)
1-562-156-11	o	HOUSING	11P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32
1-506-477-11	o	RECEPTACLE	12P MALE (STRAIGHT TYPE)
1-506-491-11	o	RECEPTACLE	12P MALE (ANGLE TYPE)
1-562-157-11	o	HOUSING	12P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32
1-506-478-11	o	RECEPTACLE	13P MALE (STRAIGHT TYPE)
1-506-492-11	o	RECEPTACLE	13P MALE (ANGLE TYPE)
1-562-627-11	o	HOUSING	13P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32

(CONNECTOR)

Part No.	SP	Description	
1-506-479-11	o	RECEPTACLE	14P MALE (STRAIGHT TYPE)
1-506-493-11	o	RECEPTACLE	14P MALE (ANGLE TYPE)
1-562-185-11	o	HOUSING	14P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32
1-506-480-11	o	RECEPTACLE	15P MALE (STRAIGHT TYPE)
1-506-494-11	o	RECEPTACLE	15P MALE (ANGLE TYPE)
1-562-958-11	o	HOUSING	15P
1-563-088-11	o	CONTACT	AWG24-30
1-563-089-11	o	CONTACT	AWG32

INDUCTOR, MICRO

Part No.	SP	Description
1-408-876-00	s	INDUCTOR, MICRO 0.18 5%
1-408-877-00	s	INDUCTOR, MICRO 0.22 5%
1-408-878-00	s	INDUCTOR, MICRO 0.33 5%
1-408-879-21	s	INDUCTOR, MICRO 0.47 5%
1-408-931-00	s	INDUCTOR, MICRO 0.56 5%
1-408-880-00	s	INDUCTOR, MICRO 0.68 5%
1-408-763-00	s	INDUCTOR, MICRO 0.82 5%
1-408-397-00	s	INDUCTOR, MICRO 1.0 5%
1-408-398-00	s	INDUCTOR, MICRO 1.2 5%
1-408-399-00	s	INDUCTOR, MICRO 1.5 5%
1-408-400-00	s	INDUCTOR, MICRO 1.8 5%
1-408-401-00	s	INDUCTOR, MICRO 2.2 5%
1-408-402-00	s	INDUCTOR, MICRO 2.7 5%
1-408-403-00	s	INDUCTOR, MICRO 3.3 5%
1-408-404-00	s	INDUCTOR, MICRO 3.9 5%
1-408-405-00	s	INDUCTOR, MICRO 4.7 5%
1-408-406-00	s	INDUCTOR, MICRO 5.6 5%
1-408-407-00	s	INDUCTOR, MICRO 6.8 5%
1-408-408-00	s	INDUCTOR, MICRO 8.2 5%
1-408-409-00	s	INDUCTOR, MICRO 10 5%
1-408-410-00	s	INDUCTOR, MICRO 12 5%
1-408-411-00	s	INDUCTOR, MICRO 15 5%
1-408-412-00	s	INDUCTOR, MICRO 18 5%
1-408-413-00	s	INDUCTOR, MICRO 22 5%
1-408-414-00	s	INDUCTOR, MICRO 27 5%
1-408-415-00	s	INDUCTOR, MICRO 33 5%
1-408-416-00	s	INDUCTOR, MICRO 39 5%
1-408-417-21	s	INDUCTOR, MICRO 47 5%
1-408-418-00	s	INDUCTOR, MICRO 56 5%
1-408-419-00	s	INDUCTOR, MICRO 68 5%
1-408-420-00	s	INDUCTOR, MICRO 82 5%
1-408-421-00	s	INDUCTOR, MICRO 100 5%
1-408-422-00	s	INDUCTOR, MICRO 120 5%
1-408-423-00	s	INDUCTOR, MICRO 150 5%
1-408-424-00	s	INDUCTOR, MICRO 180 5%
1-408-425-00	s	INDUCTOR, MICRO 220 5%
1-408-426-00	s	INDUCTOR, MICRO 270 5%
1-408-427-00	s	INDUCTOR, MICRO 330 5%
1-408-428-00	s	INDUCTOR, MICRO 390 5%
1-408-429-00	s	INDUCTOR, MICRO 470 5%

AU-136P BOARD

This board is includes the FL-101, FL-102 Boards.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-161-A	o	MOUNTED CIRCUIT BOARD, AU-136P
4pcs	1-535-622-11	o	PIN, TERMINAL
C1	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C3	1-124-225-00	s	ELECT 100uF 20% 6.3V
C4	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C7	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C8	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C11	1-164-182-11	s	CERAMIC CHIP 3300PF 10% 100V
C13	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C15	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
C16	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
C17	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C18	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C19	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C26	1-163-011-11	s	CERAMIC 0.0015uF 10% 50V
C101	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C104	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C106	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C108	1-124-225-00	s	ELECT 100uF 20% 6.3V
C109	1-135-125-21	s	TANTALUM, CHIP 33uF 20% 10V
C110	1-124-225-00	s	ELECT 100uF 20% 6.3V
C111	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C113	1-124-225-00	s	ELECT 100uF 20% 6.3V
C115	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C116	1-135-210-21	s	TANTALUM, CHIP 4.7uF 10% 10V
C117	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C207	1-124-225-00	s	ELECT 100uF 20% 6.3V
C208	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C209	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C210	1-162-587-11	s	CERAMIC, CHIP 0.039uF 10% 25V
C214	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C215	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C216	1-163-020-00	s	CERAMIC, CHIP 0.0082uF 10% 50V
C219	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C220	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C221	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C223	1-124-225-00	s	ELECT 100uF 20% 6.3V
C224	1-124-225-00	s	ELECT 100uF 20% 6.3V
C225	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C226	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C228	1-162-587-11	s	CERAMIC, CHIP 0.039uF 10% 25V
C231	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C232	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C233	1-163-020-00	s	CERAMIC, CHIP 0.0082uF 10% 50V
C234	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C236	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C238	1-163-012-00	s	CERAMIC CHIP 1800PF 10% 50V
C239	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C240	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C242	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C243	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C244	1-109-814-11	s	MICA, CHIP 220PF 5% 100V
C245	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C246	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C247	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C248	1-163-012-00	s	CERAMIC CHIP 1800PF 10% 50V
C249	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C250	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C252	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C253	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C254	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C256	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C257	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C258	1-124-225-00	s	ELECT 100uF 20% 6.3V
C259	1-124-225-00	s	ELECT 100uF 20% 6.3V
C260	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C304	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C305	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C306	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C309	1-135-145-11	s	TANTALUM, CHIP 0.47uF 10% 35V
C310	1-135-180-21	s	TANTALUM, CHIP 3.3uF 10% 10V
C313	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C316	1-163-011-11	s	CERAMIC 0.0015uF 10% 50V
C320	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C323	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C325	1-163-099-00	s	CERAMIC, CHIP 18PF 5% 50V
C327	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C328	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C330	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C331	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C338	1-124-225-00	s	ELECT 100uF 20% 6.3V
CN1	1-633-818-11	o	WIRE, FLEXIBLE CARD FL-102
CN2	1-506-471-11	s	CONNECTOR, 6P, MALE
CN3	1-566-763-11	o	CONNECTOR, 8P, MALE
CN4	1-566-761-11	o	CONNECTOR, 6P, MALE
CN6	1-566-764-11	o	CONNECTOR, 9P, MALE
CN7	1-633-817-11	o	WIRE, FLEXIBLE CARD FL-101
D201	8-719-104-34	s	DIODE 1S2835
D202	8-719-104-34	s	DIODE 1S2835
D203	8-719-104-34	s	DIODE 1S2835
D204	8-719-104-34	s	DIODE 1S2835
D301	8-719-400-18	s	DIODE MA152WK
D302	8-719-400-18	s	DIODE MA152WK
D303	8-719-104-34	s	DIODE 1S2835
D304	8-719-400-18	s	DIODE MA152WK
D305	8-719-104-34	s	DIODE 1S2835
D306	8-719-104-34	s	DIODE 1S2835
FL101	1-236-145-11	s	FILTER, BANDPASS
FL201	1-235-900-11	s	FILTER, LOW-PASS
FL202	1-235-900-11	s	FILTER, LOW-PASS
IC1	8-752-035-48	s	IC CXA1204Q
IC101	8-741-150-51	s	IC SBX1505-21
IC201	8-759-603-27	s	IC M5201FP
IC202	8-759-603-27	s	IC M5201FP
IC203	8-752-009-90	s	IC CX20099
IC204	8-759-981-92	s	IC RC4558M
IC205	8-759-981-92	s	IC RC4558M
IC206	8-752-322-57	s	IC CXD1077M
IC207	8-759-981-92	s	IC RC4558M
IC208	8-759-929-26	s	IC TL431CPS
IC301	8-759-972-13	s	IC CF77309FR
IC302	8-752-324-45	s	IC CXD1066Q-Z
IC303	8-752-010-30	s	IC CX20103
IC304	8-752-331-00	s	IC CXK5864BM-12L
IC305	8-759-948-61	s	IC CX23011-Z

Note: Plese see pages 14-11 through 14-13 for parts that
are not listed in the parts list.

(AU-136P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC306	8-759-911-19	s	IC CX23012
IC307	8-752-010-20	s	IC CX20102
IC308	8-759-149-77	s	IC UPD75106GF-734-3BE
IC309	8-759-009-07	s	IC MC14053BF
L1	1-408-777-00	s	INDUCTOR, CHIP 10uH
L2	1-408-795-21	s	INDUCTOR, CHIP 330uH
L3	1-408-777-00	s	INDUCTOR, CHIP 10uH
L101	1-408-785-21	s	INDUCTOR, CHIP 47uH
L201	1-408-793-21	s	INDUCTOR, CHIP 220uH
L301	1-408-789-21	s	INDUCTOR, CHIP 100uH
L302	1-408-789-21	s	INDUCTOR, CHIP 100uH
L303	1-408-789-21	s	INDUCTOR, CHIP 100uH
L304	1-408-789-21	s	INDUCTOR, CHIP 100uH
L305	1-408-789-21	s	INDUCTOR, CHIP 100uH
L306	1-408-789-21	s	INDUCTOR, CHIP 100uH
L307	1-408-793-21	s	INDUCTOR, CHIP 220uH
L309	1-408-789-21	s	INDUCTOR, CHIP 100uH
L310	1-408-789-21	s	INDUCTOR, CHIP 100uH
L311	1-408-777-00	s	INDUCTOR, CHIP 10uH
Q1	8-729-216-22	s	TRANSISTOR 2SA1162
Q2	8-729-100-66	s	TRANSISTOR 2SC1623
Q3	8-729-216-22	s	TRANSISTOR 2SA1162
Q4	8-729-100-66	s	TRANSISTOR 2SC1623
Q5	8-729-100-66	s	TRANSISTOR 2SC1623
Q6	8-729-901-06	s	TRANSISTOR DTA144EK
Q101	8-729-901-06	s	TRANSISTOR DTA144EK
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-100-66	s	TRANSISTOR 2SC1623
Q104	8-729-100-66	s	TRANSISTOR 2SC1623
Q106	8-729-100-66	s	TRANSISTOR 2SC1623
Q201	8-729-202-38	s	TRANSISTOR 2SC3326N
Q202	8-729-202-38	s	TRANSISTOR 2SC3326N
Q203	8-729-202-38	s	TRANSISTOR 2SC3326N
Q204	8-729-202-38	s	TRANSISTOR 2SC3326N
Q205	8-729-901-06	s	TRANSISTOR DTA144EK
Q206	8-729-901-06	s	TRANSISTOR DTA144EK
Q207	8-729-901-06	s	TRANSISTOR DTA144EK
Q208	8-729-216-22	s	TRANSISTOR 2SA1162
Q209	8-729-216-22	s	TRANSISTOR 2SA1162
Q210	8-729-202-38	s	TRANSISTOR 2SC3326N
Q211	8-729-202-38	s	TRANSISTOR 2SC3326N
Q301	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q302	8-729-122-63	s	TRANSISTOR 2SA1226
Q303	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q304	8-729-900-53	s	TRANSISTOR DTC114EK
Q305	8-729-901-06	s	TRANSISTOR DTA144EK
Q306	8-729-901-01	s	TRANSISTOR DTC144EK
Q307	8-729-901-06	s	TRANSISTOR DTA144EK
Q308	8-729-102-07	s	TRANSISTOR 2SC2223-F13
R5	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R223	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R235	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R241	1-216-680-11	s	METAL, CHIP 16K 0.5% 1/10W
R243	1-216-674-11	s	METAL, CHIP 9.1K 0.5% 1/10W
R244	1-216-662-11	s	METAL, CHIP 3K 0.5% 1/10W
R245	1-216-660-11	s	METAL, CHIP 2.4K 0.5% 1/10W
R246	1-216-662-11	s	METAL, CHIP 3K 0.5% 1/10W
R247	1-216-660-11	s	METAL, CHIP 2.4K 0.5% 1/10W
R248	1-216-674-11	s	METAL, CHIP 9.1K 0.5% 1/10W

Note: Plese see pages 14-11 through 14-13 for parts that
are not listed in the parts list.

(AU-136P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R250	1-216-680-11	s	METAL, CHIP 16K 0.5% 1/10W
R252	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R260	1-215-485-00	s	METAL 470K 1% 1/6W
R262	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R263	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R267	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R274	1-216-684-11	s	METAL, CHIP 24K 0.5% 1/10W
R276	1-216-680-11	s	METAL, CHIP 16K 0.5% 1/10W
R277	1-216-680-11	s	METAL, CHIP 16K 0.5% 1/10W
R278	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R279	1-216-684-11	s	METAL, CHIP 24K 0.5% 1/10W
R282	1-216-022-00	s	METAL, CHIP 75 5% 1/10W
R283	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R321	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R323	1-216-676-11	s	METAL, CHIP 11K 0.5% 1/10W
R365	1-249-433-11	s	CARBON 22K 5% 1/4W
RV1	1-230-870-11	s	RES, ADJ, METAL 10K
RV101	1-230-870-11	s	RES, ADJ, METAL 10K
RV102	1-230-870-11	s	RES, ADJ, METAL 10K
RV201	1-230-870-11	s	RES, ADJ, METAL 10K
RV202	1-230-870-11	s	RES, ADJ, METAL 10K
RV203	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV204	1-230-871-11	s	RES, ADJ, METAL 22K
RV205	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV206	1-230-876-11	s	RES, ADJ METAL 470K
RV207	1-230-871-11	s	RES, ADJ, METAL 22K
RV208	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV301	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV302	1-230-868-11	s	RES, ADJ, METAL 2.2K
X1	1-567-827-11	s	CRYSTAL 5.85938MHz
X301	1-567-669-91	s	RESONATOR, LITHIUM
X302	1-567-121-00	s	CRYSTAL 4.194304MHz

CC-43 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-027-A	o	MOUNTED CIRCUIT BOARD, CC-43
C1	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C2	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C3	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C4	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C5	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C12	1-126-162-11	s	ELECT 3.3uF 20% 50V
C13	1-126-162-11	s	ELECT 3.3uF 20% 50V
C31	1-135-153-21	s	TANTALUM, CHIP 2.2uF 10% 25V
C32	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C41	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C42	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
CN1	1-566-581-11	o	CONNECTOR, PIN, 50P, FEMALE
CN3	1-506-488-11	s	CONNECTOR, 9P, MALE
D11	8-719-800-76	s	DIODE 1SS226
D12	8-719-800-76	s	DIODE 1SS226
IC11	8-759-111-56	s	IC UPC4572G2
IC12	8-759-111-56	s	IC UPC4572G2
IC31	8-759-981-65	s	IC LM2903M
L1	1-408-785-21	s	INDUCTOR, CHIP 47uH
L2	1-408-785-21	s	INDUCTOR, CHIP 47uH
L3	1-408-785-21	s	INDUCTOR, CHIP 47uH
L11	1-408-776-00	s	INDUCTOR, CHIP 8.2uH
L12	1-408-776-00	s	INDUCTOR, CHIP 8.2uH
R11	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R12	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W
R13	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W
R14	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R15	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R16	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R17	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R18	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R19	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R20	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R22	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W

CC-44 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-028-A	o	MOUNTED CIRCUIT BOARD, CC-44
CN001	1-566-529-11	s	CONNECTOR, FPC 13P
CN002	1-566-527-11	s	CONNECTOR, FPC 11P
CN003	1-566-530-11	s	CONNECTOR, FPC 14P
D001	8-719-404-40	s	DIODE MA121
D002	8-719-404-40	s	DIODE MA121
D003	8-719-400-18	s	DIODE MA152WK

CP-146 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-537-142-11	s	TERMINAL
1pc	1-633-773-11	o	PRINTED CIRCUIT BOARD, CP-146

CP-147 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-633-774-11	o	PRINTED CIRCUIT BOARD, CP-147
D034	8-719-902-27	s	LED EBR3402S, RED
S034	1-570-608-11	s	SWITCH, TOGGLE

FL-101 BOARD

This board is included the AU-136P Board.

Ref. No. or Q'ty	Part No.	SP	Description
CN7	1-633-817-11	o	WIRE, FLEXIBLE CARD FL-101

FL-102 BOARD

This board is included the AU-136P Board.

Ref. No. or Q'ty	Part No.	SP	Description
CN1	1-633-818-11	o	WIRE, FLEXIBLE CARD FL-102

FL-103 BOARD

This board is included the VO-32P Board.

Ref. No. or Q'ty	Part No.	SP	Description
CN407	1-633-819-11	o	WIRE, FLEXIBLE CARD FL-103

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

FL-104 BOARD

Ref. No. or Q'ty	Part No.	SP	Description

This board is included the VO-33P Board.

Ref. No. or Q'ty	Part No.	SP	Description
CN601	1-633-820-11	o	WIRE, FLEXIBLE CARD FL-104

FP-37 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-029-A	o	MOUNTED CIRCUIT BOARD, FP-37
1pc	3-719-182-11	o	HOLDER, LCD
C1	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C2	1-135-210-21	s	TANTALUM, CHIP 4.7uF 10% 10V
C4	1-135-216-21	s	TANTALUM, CHIP 10uF 10% 10V
C5	1-135-210-21	s	TANTALUM, CHIP 4.7uF 10% 10V
C6	1-135-157-21	s	TANTALUM, CHIP 10uF 10% 6.3V
C7	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C13	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C14	1-135-210-21	s	TANTALUM, CHIP 4.7uF 10% 10V
C16	1-135-216-21	s	TANTALUM, CHIP 10uF 10% 10V
C17	1-135-210-21	s	TANTALUM, CHIP 4.7uF 10% 10V
C18	1-135-157-21	s	TANTALUM, CHIP 10uF 10% 6.3V
C19	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C25	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C26	1-135-210-21	s	TANTALUM, CHIP 4.7uF 10% 10V
C28	1-135-216-21	s	TANTALUM, CHIP 10uF 10% 10V
C29	1-135-210-21	s	TANTALUM, CHIP 4.7uF 10% 10V
C30	1-135-157-21	s	TANTALUM, CHIP 10uF 10% 6.3V
C31	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C32	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C33	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C201	1-135-210-21	s	TANTALUM, CHIP 4.7uF 10% 10V
C202	1-135-210-21	s	TANTALUM, CHIP 4.7uF 10% 10V
C203	1-135-210-21	s	TANTALUM, CHIP 4.7uF 10% 10V
C205	1-124-234-00	s	ELECT 22uF 20% 16V
C206	1-126-157-11	s	ELECT 10uF 20% 16V
C207	1-126-154-11	s	ELECT 47uF 20% 6.3V
C208	1-126-154-11	s	ELECT 47uF 20% 6.3V
C209	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C211	1-124-225-00	s	ELECT 100uF 20% 6.3V
C213	1-124-443-00	s	ELECT 100uF 20% 10V
C214	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C216	1-135-216-21	s	TANTALUM, CHIP 10uF 10% 10V
C217	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C218	1-135-216-21	s	TANTALUM, CHIP 10uF 10% 10V
C219	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C220	1-135-216-21	s	TANTALUM, CHIP 10uF 10% 10V
C221	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C222	1-126-154-11	s	ELECT 47uF 20% 6.3V
C223	1-126-154-11	s	ELECT 47uF 20% 6.3V
C224	1-126-157-11	s	ELECT 10uF 20% 16V
C225	1-126-153-11	s	ELECT 22uF 20% 6.3V
C226	1-126-157-11	s	ELECT 10uF 20% 16V
C228	1-135-216-21	s	TANTALUM, CHIP 10uF 10% 10V
C229	1-135-216-21	s	TANTALUM, CHIP 10uF 10% 10V
C230	1-135-216-21	s	TANTALUM, CHIP 10uF 10% 10V
C503	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
CN2	1-506-471-11	s	CONNECTOR, 6P, MALE
CN5	1-566-761-11	o	CONNECTOR, 6P, MALE
CN6	1-506-479-11	s	CONNECTOR, 14P, MALE
CN7	1-566-514-11	s	CONNECTOR, FPC 14P
CN8	1-506-471-11	s	CONNECTOR, 6P, MALE
CN14	1-566-517-11	s	CONNECTOR, FPC 17P
D1	8-719-800-76	s	DIODE 1SS226
D6	8-719-800-76	s	DIODE 1SS226
D7	8-719-800-76	s	DIODE 1SS226

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

(FP-37 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D201	8-719-400-18	s	DIODE MA152WK
D202	8-719-121-87	s	DIODE RD15ESL2
D203	8-719-800-76	s	DIODE 1SS226
D204	8-719-121-13	s	DIODE RD8.2ESL1
D206	8-719-911-19	s	DIODE 1SS119
D207	8-719-911-19	s	DIODE 1SS119
D208	8-719-400-18	s	DIODE MA152WK
D501	8-719-800-56	s	LED TLUR164, RED
D502	8-719-945-13	s	DIODE SLH-34YC3F
D503	8-719-945-13	s	DIODE SLH-34YC3F
D504	8-719-945-13	s	DIODE SLH-34YC3F
D505	8-719-945-13	s	DIODE SLH-34YC3F
IC1	8-759-111-56	s	IC UPC4572G2
IC2	8-759-111-56	s	IC UPC4572G2
IC4	8-759-111-56	s	IC UPC4572G2
IC5	8-759-111-56	s	IC UPC4572G2
IC6	8-759-111-56	s	IC UPC4572G2
IC8	8-759-939-41	s	IC S-81230AG-RB
IC10	8-759-111-56	s	IC UPC4572G2
IC201	8-759-111-56	s	IC UPC4572G2
IC202	8-759-111-56	s	IC UPC4572G2
IC203	8-759-981-99	s	IC RC4560M
IC204	8-759-700-50	s	IC NJM386M
IC205	8-759-009-07	s	IC MC14053BF
IC501	8-759-972-12	s	IC CF77305FT
IC502	8-752-814-56	s	IC CXP5078H-041Q
IC503	1-808-016-11	s	ARRAY, LED
L201	1-408-798-00	s	INDUCTOR, CHIP 1mH
L202	1-408-798-00	s	INDUCTOR, CHIP 1mH
L203	1-408-798-00	s	INDUCTOR, CHIP 1mH
L501	1-408-777-00	s	INDUCTOR, CHIP 10uH
L502	1-408-777-00	s	INDUCTOR, CHIP 10uH
LCD501	1-807-981-11	s	LCD
Q1	8-729-100-66	s	TRANSISTOR 2SC1623
Q2	8-729-100-66	s	TRANSISTOR 2SC1623
Q3	8-729-100-66	s	TRANSISTOR 2SC1623
Q4	8-729-100-66	s	TRANSISTOR 2SC1623
Q5	8-729-901-01	s	TRANSISTOR DTC144EK
Q6	8-729-100-66	s	TRANSISTOR 2SC1623
Q7	8-729-100-66	s	TRANSISTOR 2SC1623
Q8	8-729-100-66	s	TRANSISTOR 2SC1623
Q9	8-729-100-66	s	TRANSISTOR 2SC1623
Q10	8-729-100-66	s	TRANSISTOR 2SC1623
Q11	8-729-901-01	s	TRANSISTOR DTC144EK
Q12	8-729-100-66	s	TRANSISTOR 2SC1623
Q13	8-729-100-66	s	TRANSISTOR 2SC1623
Q14	8-729-100-66	s	TRANSISTOR 2SC1623
Q15	8-729-100-66	s	TRANSISTOR 2SC1623
Q16	8-729-100-66	s	TRANSISTOR 2SC1623
Q17	8-729-100-66	s	TRANSISTOR 2SC1623
Q201	8-729-100-66	s	TRANSISTOR 2SC1623
Q202	8-729-100-66	s	TRANSISTOR 2SC1623
Q203	8-729-100-66	s	TRANSISTOR 2SC1623
Q204	8-729-216-22	s	TRANSISTOR 2SA1162
Q205	8-729-202-38	s	TRANSISTOR 2SC3326N
Q206	8-729-216-22	s	TRANSISTOR 2SA1162
Q501	8-729-901-01	s	TRANSISTOR DTC144EK
Q502	8-729-901-01	s	TRANSISTOR DTC144EK

(FP-37 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q503	8-729-900-52	s	TRANSISTOR DTC114YK
R2	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R3	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R7	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R8	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R9	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R10	1-216-678-11	s	METAL, CHIP 13K 0.5% 1/10W
R12	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R13	1-216-682-11	s	METAL, CHIP 20K 0.5% 1/10W
R15	1-216-682-11	s	METAL, CHIP 20K 0.5% 1/10W
R16	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R17	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R35	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R36	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R39	1-216-678-11	s	METAL, CHIP 13K 0.5% 1/10W
R40	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R42	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R43	1-216-682-11	s	METAL, CHIP 20K 0.5% 1/10W
R45	1-216-682-11	s	METAL, CHIP 20K 0.5% 1/10W
R46	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R47	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R72	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R73	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R77	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R78	1-216-678-11	s	METAL, CHIP 13K 0.5% 1/10W
R80	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R81	1-216-682-11	s	METAL, CHIP 20K 0.5% 1/10W
R83	1-216-682-11	s	METAL, CHIP 20K 0.5% 1/10W
R84	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R85	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R211	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R224	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R225	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R235	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R257	1-216-676-11	s	METAL, CHIP 11K 0.5% 1/10W
R259	1-216-115-00	s	METAL, CHIP 560K 5% 1/10W
R512	1-249-411-11	s	CARBON 330 5% 1/4W
R513	1-249-412-11	s	CARBON 390 5% 1/4W
R514	1-249-409-11	s	CARBON 220 5% 1/4W
R515	1-249-409-11	s	CARBON 220 5% 1/4W
RV1	1-230-337-11	s	RES, VAR, CARBON 10K
RV2	1-230-337-11	s	RES, VAR, CARBON 10K
RV3	1-230-337-11	s	RES, VAR, CARBON 10K
RV4	1-238-007-11	s	RES, ADJ METAL 100K
RV201	1-238-005-11	s	RES, ADJ METAL 10K
RV202	1-230-337-11	s	RES, VAR, CARBON 10K
RV203	1-230-337-11	s	RES, VAR, CARBON 10K
RV204	1-238-004-11	s	RES, ADJ METAL 4.7K
RV205	1-238-004-11	s	RES, ADJ METAL 4.7K
RV206	1-238-004-11	s	RES, ADJ METAL 4.7K
RV207	1-238-006-11	s	RES, ADJ METAL 22K
S1	1-570-839-11	s	SWITCH, SLIDE
S2	1-570-862-11	s	SWITCH, SLIDE
S3	1-570-844-11	s	SWITCH, SLIDE
S4	1-570-844-11	s	SWITCH, SLIDE
S5	1-571-275-11	s	SWITCH, SLIDE
S6	1-571-275-11	s	SWITCH, SLIDE

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

(FP-37 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
S7	1-571-275-11	s	SWITCH, SLIDE
S201	1-570-850-21	s	SWITCH, SLIDE
S202	1-570-856-11	s	SWITCH, SLIDE
S203	1-570-853-11	s	SWITCH, SLIDE
S501	1-570-373-12	s	SWITCH, SLIDE
S502	1-570-856-11	s	SWITCH, SLIDE
S503	1-570-845-11	s	SWITCH, SLIDE
S504	1-554-371-51	s	SWITCH, TACTILE
S505	1-570-845-11	s	SWITCH, SLIDE
TM501	1-548-119-21	s	HOURS METER
X501	1-567-346-11	s	RESONATOR, CERAMIC 0.5MHz

FP-161 BOARD

This board is included the SS-43P Board.

Ref. No. or Q'ty	Part No.	SP	Description
CN010	1-629-194-11	s	PRINTED CIRCUIT BOARD, FP-161

HD-8P BOARD

This board is include the VO-33P Board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A7062-154-A	s	MOUNTED CIRCUIT BOARD, HD-8P

HP-49 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-633-776-11	o	PRINTED CIRCUIT BOARD, HP-49
C1	1-161-377-00	s	CERAMIC, CHIP 0.0047uF 20% 50V
C2	1-161-377-00	s	CERAMIC, CHIP 0.0047uF 20% 50V
CN034	1-507-980-11	s	JACK, PHONE
R1	1-249-395-11	s	CARBON 15 5% 1/4W
R2	1-249-395-11	s	CARBON 15 5% 1/4W

HR-3P BOARD

This board is included the RP-56P Board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7068-155-A	s	MOUNTED, CIRCUIT BOARD HR-3P

KY-191 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
D1	8-719-920-65	s	LED GL-1HD1, RED
D2	8-719-920-65	s	LED GL-1HD1, RED
D3	8-719-920-65	s	LED GL-1HD1, RED
D4	8-719-400-18	s	DIODE MA152WK
D5	8-719-400-18	s	DIODE MA152WK
D6	8-719-400-18	s	DIODE MA152WK
S1	1-554-371-51	s	SWITCH, TACTILE
S2	1-554-371-51	s	SWITCH, TACTILE
S3	1-554-371-51	s	SWITCH, TACTILE
S4	1-554-371-51	s	SWITCH, TACTILE
S5	1-554-371-51	s	SWITCH, TACTILE

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

PS-209 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-032-A	o	MOUNTED CIRCUIT BOARD, PS-209
1pc	3-744-371-01	o	CASE (2), SHIELD, PS
1pc	3-744-372-01	o	INSULATOR (1), PS
1pc	3-744-373-01	o	INSULATOR (2), PS
1pc	3-744-379-01	o	PLATE (AL), SHIELD
1pc	3-744-382-01	o	CASE (1), SHIELD, PS
C1	1-131-374-00	s	TANTALUM 33uF 10% 16V
C2	1-131-374-00	s	TANTALUM 33uF 10% 16V
C3	1-131-374-00	s	TANTALUM 33uF 10% 16V
C4	1-131-374-00	s	TANTALUM 33uF 10% 16V
C5	1-131-374-00	s	TANTALUM 33uF 10% 16V
C6	1-131-374-00	s	TANTALUM 33uF 10% 16V
C7	1-131-374-00	s	TANTALUM 33uF 10% 16V
C8	1-131-374-00	s	TANTALUM 33uF 10% 16V
C9	1-131-374-00	s	TANTALUM 33uF 10% 16V
C10	1-131-374-00	s	TANTALUM 33uF 10% 16V
C11	1-131-374-00	s	TANTALUM 33uF 10% 16V
C101	1-126-094-11	s	ELECT 4.7uF 20% 35V
C102	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C104	1-126-160-11	s	ELECT 1uF 20% 50V
C105	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C106	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C111	1-124-943-11	s	ELECT 39 20% 25V
C113	1-124-943-11	s	ELECT 39 20% 25V
C114	1-124-584-00	s	ELECT 100uF 20% 10V
C115	1-124-225-00	s	ELECT 100uF 20% 6.3V
C116	1-124-225-00	s	ELECT 100uF 20% 6.3V
C117	1-124-225-00	s	ELECT 100uF 20% 6.3V
C152	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C153	1-126-160-11	s	ELECT 1uF 20% 50V
C154	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C155	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C156	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C157	1-126-160-11	s	ELECT 1uF 20% 50V
C172	1-126-094-11	s	ELECT 4.7uF 20% 35V
C174	1-126-154-11	s	ELECT 47uF 20% 6.3V
C175	1-124-225-00	s	ELECT 100uF 20% 6.3V
C181	1-124-943-11	s	ELECT 39 20% 25V
C183	1-124-943-11	s	ELECT 39 20% 25V
C184	1-124-569-11	s	ELECT 56uF 20% 16V
C185	1-124-589-11	s	ELECT 47uF 20% 16V
CN1	1-508-950-00	s	CONNECTOR, IL 4P, MALE
CN2	1-508-934-00	o	CONNECTOR, IL 3P, MALE
CN3	1-508-933-00	o	CONNECTOR, IL 2P, MALE
CN8	1-506-471-11	s	CONNECTOR, 6P, MALE
D101	8-719-800-76	s	DIODE 1SS226
D111	8-719-981-00	s	DIODE ERC81-004
D151	8-719-400-18	s	DIODE MA152WK
D152	8-719-104-34	s	DIODE 1S2835
D171	8-719-981-01	s	DIODE ERA81-004
D181	8-719-981-01	s	DIODE ERA81-004
IC101	8-759-937-36	s	IC TL1451ACNS
IC151	8-759-937-36	s	IC TL1451ACNS
L111	1-424-105-11	s	COIL, CHOKE 22UH
L112	1-412-218-11	s	COIL, CHOKE 47uH
L171	1-424-359-11	s	COIL, CHOKE 22UH
L172	1-412-218-11	s	COIL, CHOKE 47uH
L181	1-424-105-11	s	COIL, CHOKE 22UH
L182	1-412-218-11	s	COIL, CHOKE 47uH
PS1	⚠1-532-846-21	s	LINK, IC
Q1	8-729-208-96	s	TRANSISTOR 2SA1242-Y
Q2	8-729-901-01	s	TRANSISTOR DTC144EK
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q111	8-729-271-22	s	TRANSISTOR 2SC2712-G
Q113	8-729-208-96	s	TRANSISTOR 2SA1242-Y
Q151	8-729-901-01	s	TRANSISTOR DTC144EK
Q152	8-729-901-06	s	TRANSISTOR DTA144EK
Q171	8-729-271-22	s	TRANSISTOR 2SC2712-G
Q172	8-729-807-33	s	TRANSISTOR 2SB1123-T
Q181	8-729-271-22	s	TRANSISTOR 2SC2712-G
Q183	8-729-208-96	s	TRANSISTOR 2SA1242-Y
R4	1-249-409-11	s	CARBON 220 5% 1/4W
R102	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R115	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R116	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R159	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R173	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R185	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R186	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
RV101	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV111	1-230-867-11	s	RES, ADJ, METAL 1K
RV221	1-230-870-11	s	RES, ADJ, METAL 10K
RV241	1-230-867-11	s	RES, ADJ, METAL 1K

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

RP-56P BOARD

This board includes the HR-3P Board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-159-A	o	MOUNTED CIRCUIT BOARD, RP-56P
1pc	3-744-353-01	o	PLATE, SHIELD, D.F
C001	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C002	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C003	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C005	1-164-330-21	s	CERAMIC, CHIP 0.22uF 10% 16V
C006	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C007	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
C008	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C009	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C010	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
C011	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C012	1-164-330-21	s	CERAMIC, CHIP 0.22uF 10% 16V
C013	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C015	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C016	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C017	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C018	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C019	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C020	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C021	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C022	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C023	1-135-157-21	s	TANTALUM, CHIP 10uF 10% 6.3V
C024	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C025	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C027	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C030	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C031	1-162-955-11	s	CERAMIC, CHIP 150PF 5% 50V
C033	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C034	1-162-912-11	s	CERAMIC, CHIP 7PF 50V
C035	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C036	1-162-955-11	s	CERAMIC, CHIP 150PF 5% 50V
C038	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C039	1-162-912-11	s	CERAMIC, CHIP 7PF 50V
C042	1-135-157-21	s	TANTALUM, CHIP 10uF 10% 6.3V
C043	1-135-157-21	s	TANTALUM, CHIP 10uF 10% 6.3V
C044	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C800	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C803	1-124-778-00	s	ELECT 22uF 20% 6.3V
C807	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C808	1-162-917-11	s	CERAMIC, CHIP 15PF 5% 50V
C809	1-135-201-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C810	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C811	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C813	1-162-940-11	s	CERAMIC, CHIP 9PF 50V
C814	1-162-940-11	s	CERAMIC, CHIP 9PF 50V
C816	1-162-953-11	s	CERAMIC, CHIP 100PF 5% 50V
C817	1-162-952-11	s	CERAMIC, CHIP 82PF 5% 50V
C819	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C820	1-162-953-11	s	CERAMIC, CHIP 100PF 5% 50V
C821	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C824	1-162-947-11	s	CERAMIC, CHIP 33PF 5% 50V
C825	1-162-965-11	s	CERAMIC, CHIP 0.0015uF 10% 50V
C827	1-162-958-11	s	CERAMIC, CHIP 270PF 5% 50V
C829	1-162-949-11	s	CERAMIC, CHIP 47PF 5% 50V
C830	1-162-948-11	s	CERAMIC, CHIP 39PF 5% 50V
C831	1-162-952-11	s	CERAMIC, CHIP 82PF 5% 50V

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

(RP-56P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C833	1-126-601-11	s	ELECT 2.2uF 20% 50V
C834	1-162-949-11	s	CERAMIC, CHIP 47PF 5% 50V
C835	1-162-949-11	s	CERAMIC, CHIP 47PF 5% 50V
C839	1-162-938-11	s	CERAMIC, CHIP 7PF 50V
C840	1-162-941-11	s	CERAMIC, CHIP 10PF 50V
C845	1-162-945-11	s	CERAMIC, CHIP 22PF 5% 50V
C850	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C851	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C853	1-162-938-11	s	CERAMIC, CHIP 7PF 50V
C854	1-162-944-11	s	CERAMIC, CHIP 18PF 5% 50V
C859	1-162-949-11	s	CERAMIC, CHIP 47PF 5% 50V
C861	1-162-937-11	s	CERAMIC, CHIP 6PF 50V
C862	1-162-945-11	s	CERAMIC, CHIP 22PF 5% 50V
C863	1-126-603-11	s	ELECT 4.7uF 20% 35V
C865	1-126-603-11	s	ELECT 4.7uF 20% 35V
C870	1-162-955-11	s	CERAMIC, CHIP 150PF 5% 50V
C871	1-162-968-11	s	CERAMIC, CHIP 0.0047uF 10% 50V
C872	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C873	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C876	1-162-944-11	s	CERAMIC, CHIP 18PF 5% 50V
C880	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C882	1-124-778-00	s	ELECT 22uF 20% 6.3V
C883	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C885	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C886	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C888	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C890	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C891	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C892	1-164-361-11	s	CERAMIC, CHIP 0.047uF 16V
C893	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C894	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C897	1-164-227-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C898	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C899	1-162-913-11	s	CERAMIC, CHIP 8PF 50V
C900	1-162-948-11	s	CERAMIC, CHIP 39PF 5% 50V
C902	1-162-945-11	s	CERAMIC, CHIP 22PF 5% 50V
C905	1-135-201-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C906	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C907	1-162-910-11	s	CERAMIC, CHIP 5PF 50V
C908	1-162-954-11	s	CERAMIC, CHIP 120PF 5% 50V
C951	1-124-778-00	s	ELECT 22uF 20% 6.3V
C953	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C954	1-162-957-11	s	CERAMIC, CHIP 220PF 5% 50V
C955	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C957	1-162-945-11	s	CERAMIC, CHIP 22PF 5% 50V
C958	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C959	1-135-180-21	s	TANTALUM, CHIP 3.3uF 10% 10V
C960	1-162-946-11	s	CERAMIC, CHIP 27PF 5% 50V
C961	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C962	1-135-180-21	s	TANTALUM, CHIP 3.3uF 10% 10V
C971	1-164-227-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C972	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C973	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C974	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C975	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C976	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C977	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C978	1-164-227-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C979	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V

(RP-56P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C980	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C982	1-164-357-11	s	CERAMIC, CHIP 1000PF 5% 50V
C983	1-164-357-11	s	CERAMIC, CHIP 1000PF 5% 50V
C986	1-107-042-00	s	MICA 2.2PF 500V
C987	1-107-047-00	s	MICA 5.6PF 500V
CN801	1-566-516-11	s	CONNECTOR, FPC 16P
CN803	1-566-765-11	o	CONNECTOR, 10P, MALE
CN804	1-566-766-11	o	CONNECTOR, 11P, MALE
CN805	1-566-761-11	o	CONNECTOR, 6P, MALE
D001	8-719-400-18	s	DIODE MA152WK
D001	8-719-801-41	s	DIODE 1SS196
D002	8-719-400-18	s	DIODE MA152WK
D002	8-719-801-41	s	DIODE 1SS196
D801	8-719-123-85	s	DIODE 1SS304
D802	8-719-123-85	s	DIODE 1SS304
D804	8-719-800-76	s	DIODE 1SS226
D805	8-719-123-85	s	DIODE 1SS304
D806	8-719-123-85	s	DIODE 1SS304
D807	8-719-400-18	s	DIODE MA152WK
D808	8-719-123-85	s	DIODE 1SS304
D810	8-719-123-85	s	DIODE 1SS304
D811	8-719-800-76	s	DIODE 1SS226
D812	8-719-123-85	s	DIODE 1SS304
D813	8-719-123-85	s	DIODE 1SS304
D814	8-719-123-85	s	DIODE 1SS304
D951	8-719-800-76	s	DIODE 1SS226
DL801	1-415-154-00	s	DELAY LINE 35nS
IC001	8-752-033-00	s	IC CXA1234AR
IC801	8-759-233-94	s	IC TA8607F
IC802	8-759-925-60	s	IC BA401
IC803	8-759-012-00	s	IC MC10H116M
IC804	8-759-710-09	s	IC NJM2233AM
IC805	8-759-927-46	s	IC SN74HC00NS
L001	1-410-385-11	s	INDUCTOR, CHIP 22uH
L002	1-410-656-11	s	INDUCTOR, CHIP 150uH
L004	1-410-393-11	s	INDUCTOR, CHIP 100uH
L005	1-410-381-11	s	INDUCTOR, CHIP 10uH
L007	1-410-393-11	s	INDUCTOR, CHIP 100uH
L800	1-410-389-31	s	INDUCTOR, CHIP 47uH
L801	1-410-732-31	s	INDUCTOR, CHIP 0.18uH
L802	1-410-381-11	s	INDUCTOR, CHIP 10uH
L803	1-410-382-31	s	INDUCTOR, CHIP 12uH
L804	1-410-384-31	s	INDUCTOR, CHIP 18uH
L805	1-410-384-31	s	INDUCTOR, CHIP 18uH
L806	1-410-381-11	s	INDUCTOR, CHIP 10uH
L807	1-410-381-11	s	INDUCTOR, CHIP 10uH
L808	1-408-795-21	s	INDUCTOR, CHIP 330uH
L809	1-410-167-41	s	INDUCTOR, CHIP 820uH
L810	1-410-657-21	s	INDUCTOR, CHIP 180uH
L811	1-410-379-21	s	INDUCTOR, CHIP 6.8uH
L812	1-410-374-11	s	INDUCTOR, CHIP 2.7uH
L813	1-410-379-21	s	INDUCTOR, CHIP 6.8uH
L814	1-410-380-31	s	INDUCTOR, CHIP 8.2uH
L815	1-410-384-31	s	INDUCTOR, CHIP 18uH
L816	1-408-797-11	s	INDUCTOR, CHIP 470uH
L817	1-408-797-11	s	INDUCTOR, CHIP 470uH
L818	1-410-384-31	s	INDUCTOR, CHIP 18uH

Note: Plese see pages 14-11 through 14-13 for parts that
are not listed in the parts list.

(RP-56P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L819	1-408-793-21	s	INDUCTOR, CHIP 220uH
L820	1-410-381-11	s	INDUCTOR, CHIP 10uH
L821	1-410-384-31	s	INDUCTOR, CHIP 18uH
L822	1-410-383-31	s	INDUCTOR, CHIP 15uH
L823	1-410-387-11	s	INDUCTOR, CHIP 33uH
L825	1-410-381-11	s	INDUCTOR, CHIP 10uH
L951	1-410-381-11	s	INDUCTOR, CHIP 10uH
L952	1-410-387-11	s	INDUCTOR, CHIP 33uH
L953	1-410-381-11	s	INDUCTOR, CHIP 10uH
L954	1-410-381-11	s	INDUCTOR, CHIP 10uH
Q001	8-729-402-42	s	TRANSISTOR UN5213
Q001	8-729-905-18	s	TRANSISTOR DTC144EU
Q002	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q003	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q801	8-729-901-02	s	TRANSISTOR DTC124XK
Q802	8-729-105-68	s	TRANSISTOR 2SC3356-K
Q803	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q804	8-729-117-32	s	TRANSISTOR 2SC4177
Q805	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q806	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q807	8-729-905-12	s	TRANSISTOR DTA144EU
Q808	8-729-216-22	s	TRANSISTOR 2SA1162
Q809	8-729-119-76	s	TRANSISTOR 2SA1115P
Q810	8-729-216-22	s	TRANSISTOR 2SA1162
Q811	8-729-117-32	s	TRANSISTOR 2SC4177
Q812	8-729-117-32	s	TRANSISTOR 2SC4177
Q813	8-729-904-07	s	TRANSISTOR FMG2
Q814	8-729-905-45	s	TRANSISTOR DTA143EU
Q815	8-729-905-09	s	TRANSISTOR DTA144WU
Q817	8-729-117-32	s	TRANSISTOR 2SC4177
Q819	8-729-117-32	s	TRANSISTOR 2SC4177
Q820	8-729-903-10	s	TRANSISTOR FMW1
Q821	8-729-117-32	s	TRANSISTOR 2SC4177
Q822	8-729-117-32	s	TRANSISTOR 2SC4177
Q823	8-729-162-44	s	TRANSISTOR 2SB624-BV4
Q824	8-729-905-18	s	TRANSISTOR DTC144EU
Q825	8-729-904-07	s	TRANSISTOR FMG2
Q826	8-729-905-12	s	TRANSISTOR DTA144EU
Q827	8-729-905-18	s	TRANSISTOR DTC144EU
Q828	8-729-907-00	s	TRANSISTOR DTC114EU
Q829	8-729-905-18	s	TRANSISTOR DTC144EU
Q830	8-729-216-22	s	TRANSISTOR 2SA1162
Q831	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q832	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q833	8-729-202-38	s	TRANSISTOR 2SC3326N
Q836	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q837	8-729-117-32	s	TRANSISTOR 2SC4177
Q838	8-729-117-32	s	TRANSISTOR 2SC4177
Q839	8-729-117-32	s	TRANSISTOR 2SC4177
Q840	8-729-905-XX	s	TRANSISTOR DTC114TU
Q841	8-729-117-32	s	TRANSISTOR 2SC4177
Q842	8-729-117-32	s	TRANSISTOR 2SC4177
Q843	8-729-117-32	s	TRANSISTOR 2SC4177
Q844	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q848	8-729-905-18	s	TRANSISTOR DTC144EU
Q849	8-729-905-18	s	TRANSISTOR DTC144EU
Q850	8-729-117-32	s	TRANSISTOR 2SC4177
Q851	8-729-905-18	s	TRANSISTOR DTC144EU
Q852	8-729-216-22	s	TRANSISTOR 2SA1162

(RP-56P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q951	8-729-907-26	s	TRANSISTOR IMX1
Q952	8-729-117-32	s	TRANSISTOR 2SC4177
Q953	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q954	8-729-117-32	s	TRANSISTOR 2SC4177
Q955	8-729-903-97	s	TRANSISTOR FMS1FE
Q956	8-729-117-32	s	TRANSISTOR 2SC4177
Q957	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q958	8-729-117-32	s	TRANSISTOR 2SC4177
Q959	8-729-905-18	s	TRANSISTOR DTC144EU
Q960	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q961	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q962	8-729-200-86	s	TRANSISTOR 2SC2714-O
Q963	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q964	8-729-907-46	s	TRANSISTOR IMZ1
Q965	8-729-903-10	s	TRANSISTOR FMW1
Q966	8-729-901-01	s	TRANSISTOR DTC144EK
Q967	8-729-216-22	s	TRANSISTOR 2SA1162
R006	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R007	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R008	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R009	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R026	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R028	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R030	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R032	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R110	1-249-429-11	s	CARBON 10K 5% 1/4W
R801	1-216-832-11	s	METAL, CHIP 8.2K 5% 1/16W
R802	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R803	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R804	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R805	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R806	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R807	1-216-828-11	s	METAL, CHIP 3.9K 5% 1/16W
R808	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R809	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R810	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R811	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R812	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R813	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R814	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R817	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R818	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R819	1-216-807-11	s	METAL, CHIP 68 5% 1/16W
R820	1-216-804-11	s	METAL, CHIP 39 5% 1/16W
R821	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R822	1-216-814-11	s	METAL, CHIP 270 5% 1/16W
R823	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R824	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R825	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R826	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R827	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R828	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R829	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R830	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R831	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R832	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R834	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R835	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W

(RP-56P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R836	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R837	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R838	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R839	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R840	1-216-810-11	s	METAL, CHIP 120 5% 1/16W
R841	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R842	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R843	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R844	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R845	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R846	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R847	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R848	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R849	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R850	1-216-810-11	s	METAL, CHIP 120 5% 1/16W
R852	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R856	1-216-820-11	s	METAL, CHIP 820 5% 1/16W
R857	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R858	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R859	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R861	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R862	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R865	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R866	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R867	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R868	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R869	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R870	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R874	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R875	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R876	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R877	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R878	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
R879	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
R880	1-249-431-11	s	CARBON 15K 5% 1/4W
R881	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R882	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R883	1-216-844-11	s	METAL, CHIP 82K 5% 1/16W
R884	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R885	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R886	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R887	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R888	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R889	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R890	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R892	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R893	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R895	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R896	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R897	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R898	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R899	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R900	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R901	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R902	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R907	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R908	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R909	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R910	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W

Note: Plese see pages 14-11 through 14-13 for parts that
are not listed in the parts list.

(RP-56P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R911	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R913	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R914	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R915	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R916	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R917	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R918	1-218-299-11	s	METAL, CHIP 2.7K 1% 1/16W
R919	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R920	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R921	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R922	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R923	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R924	1-216-820-11	s	METAL, CHIP 820 5% 1/16W
R925	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R929	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R930	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R931	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R932	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R933	1-216-832-11	s	METAL, CHIP 8.2K 5% 1/16W
R934	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R935	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R936	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R937	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R938	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R939	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R940	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R941	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R944	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R945	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R946	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R947	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R948	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R949	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R950	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R951	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R952	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R953	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R954	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R955	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R956	1-216-820-11	s	METAL, CHIP 820 5% 1/16W
R957	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R958	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R959	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R960	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R961	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R962	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R963	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R964	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R965	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R966	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R967	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R968	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R969	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R970	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R971	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R972	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R973	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R974	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R975	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W

(RP-56P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R976	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R977	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R978	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R979	1-216-052-00	s	METAL, CHIP 1.3K 5% 1/10W
R981	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R982	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R983	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R984	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R985	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R986	1-216-034-00	s	METAL, CHIP 240 5% 1/10W
R987	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R988	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R989	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R990	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R991	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R992	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R993	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R994	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R995	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R996	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R997	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R998	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R999	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
RV801	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV802	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV803	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV805	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV806	1-230-867-11	s	RES, ADJ, METAL 1K
RV807	1-230-869-11	s	RES, ADJ, METAL 4.7K

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

SS-43P BOARD

This board includes the FP-161 Board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-160-A	o	MOUNTED CIRCUIT BOARD, SS-43P
C001	1-135-157-21	s	TANTALUM, CHIP 10uF 10% 6.3V
C002	1-135-157-21	s	TANTALUM, CHIP 10uF 10% 6.3V
C003	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C004	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C006	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C007	1-163-095-00	s	CERAMIC, CHIP 12PF 5% 50V
C008	1-163-095-00	s	CERAMIC, CHIP 12PF 5% 50V
C010	1-135-162-21	s	TANTALUM, CHIP 33uF 10% 6.3V
C011	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C014	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C015	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C016	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C019	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C030	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C200	1-135-157-21	s	TANTALUM, CHIP 10uF 10% 6.3V
C202	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C203	1-135-157-21	s	TANTALUM, CHIP 10uF 10% 6.3V
C204	1-124-779-00	s	ELECT 10uF 20% 16V
C205	1-124-779-00	s	ELECT 10uF 20% 16V
C206	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C207	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C208	1-124-779-00	s	ELECT 10uF 20% 16V
C209	1-135-159-21	s	TANTALUM, CHIP 10uF 10% 20V
C211	1-127-539-11	s	ALUMN SOLID 1uF 20% 25V
C212	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C213	1-135-154-21	s	TANTALUM, CHIP 3.3uF 10% 20V
C214	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C215	1-124-779-00	s	ELECT 10uF 20% 16V
C217	1-164-330-21	s	CERAMIC, CHIP 0.22uF 10% 16V
C218	1-164-330-21	s	CERAMIC, CHIP 0.22uF 10% 16V
C219	1-164-330-21	s	CERAMIC, CHIP 0.22uF 10% 16V
C222	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
C223	1-136-718-11	s	FILM 0.1MF 5% 25V
C224	1-126-437-11	s	ELECT 47uF 20% 16V
C225	1-127-558-11	s	ALUMN SOLID 10uF 20% 10V
C226	1-163-023-00	s	CERAMIC, CHIP 0.015uF 5% 50V
C229	1-163-123-00	s	CERAMIC, CHIP 180PF 5% 50V
C231	1-163-095-00	s	CERAMIC, CHIP 12PF 5% 50V
C233	1-127-558-11	s	ALUMN SOLID 10uF 20% 10V
C236	1-127-558-11	s	ALUMN SOLID 10uF 20% 10V
C237	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C239	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C243	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C244	1-135-154-21	s	TANTALUM, CHIP 3.3uF 10% 20V
C245	1-163-077-00	s	CERAMIC, CHIP 0.1uF 25V
C300	1-135-210-21	s	TANTALUM, CHIP 4.7uF 10% 10V
C301	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
CN001	1-566-530-11	s	CONNECTOR, FPC 14P
CN002	1-565-527-11	s	CONNECTOR, PC BOARD 2P, MALE
CN003	1-565-527-11	s	CONNECTOR, PC BOARD 2P, MALE
CN006	1-565-878-11	s	CONNECTOR, PC BOARD 6P, MALE
CN007	1-566-764-11	o	CONNECTOR, 9P, MALE
CN008	1-566-762-11	o	CONNECTOR, 7P, MALE
CN009	1-569-035-11	s	CONNECTOR, FPC 30P
CN010	1-629-194-11	s	PRINTED CIRCUIT BOARD, FP-161

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

(SS-43P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
CN011	1-565-529-21	s	CONNECTOR, PC BOARD 4P, MALE
CN012	1-565-529-21	s	CONNECTOR, PC BOARD 4P, MALE
CN013	1-562-880-11	o	CONNECTOR, 15P, FEMALE
D005	8-719-404-35	s	DIODE MA141WK
D010	8-719-105-28	s	DIODE RD2.4M-B
D200	8-719-938-75	s	DIODE SB05-05CP
D201	8-719-938-75	s	DIODE SB05-05CP
D202	8-719-404-32	s	DIODE MA141WA
D300	8-719-400-18	s	DIODE MA152WK
D301	8-719-911-19	s	DIODE 1SS119
IC001	8-752-815-57		IC CXP80116-670Q
IC001	8-752-815-57		IC CXP80116-670Q
IC002	8-759-804-72	s	IC LB1631M
IC003	8-759-013-22	s	IC LM358M
IC200	8-759-107-68	s	IC CX20115A
IC201	8-759-202-45	s	IC CX20114
IC202	8-759-805-06	s	IC CXA1127M
IC203	8-759-100-94	s	IC UPC358G2
IC204	8-759-945-17	s	IC MB3775PF
L001	1-410-381-11	s	INDUCTOR, CHIP 10uH
L200	1-410-381-11	s	INDUCTOR, CHIP 10uH
L201	1-424-104-11	s	COIL, CHOKE 10UH
L202	1-424-106-11	s	COIL, CHOKE 47UH
L203	1-424-105-11	s	COIL, CHOKE 22UH
Q001	8-729-100-66	s	TRANSISTOR 2SC1623
Q003	8-729-100-66	s	TRANSISTOR 2SC1623
Q005	8-729-907-00	s	TRANSISTOR DTC114EU
Q006	8-729-104-93	s	TRANSISTOR 2SB1040A-3
Q007	8-729-905-35	s	TRANSISTOR 2SC4081-R
Q008	8-729-905-35	s	TRANSISTOR 2SC4081-R
Q011	8-729-907-03	s	TRANSISTOR FMG5
Q012	8-729-905-18	s	TRANSISTOR DTC144EU
Q013	8-729-907-26	s	TRANSISTOR IMX1
Q014	8-729-905-35	s	TRANSISTOR 2SC4081-R
Q200	8-729-905-12	s	TRANSISTOR DTA144EU
Q201	8-729-905-23	s	TRANSISTOR 2SA1576-R
Q202	8-729-905-35	s	TRANSISTOR 2SC4081-R
Q203	8-729-905-12	s	TRANSISTOR DTA144EU
Q204	8-729-905-61	s	TRANSISTOR DTC124EU
Q205	8-729-905-18	s	TRANSISTOR DTC144EU
Q206	8-729-905-35	s	TRANSISTOR 2SC4081-R
Q207	8-729-805-25	s	TRANSISTOR 2SB1121
Q208	8-729-119-83	s	TRANSISTOR 2SC4175-B3
Q209	8-729-805-25	s	TRANSISTOR 2SB1121
Q210	8-729-119-83	s	TRANSISTOR 2SC4175-B3
Q211	8-729-905-18	s	TRANSISTOR DTC144EU
Q212	8-729-920-39	s	TRANSISTOR IMT1US
Q213	8-729-905-18	s	TRANSISTOR DTC144EU
Q214	8-729-901-04	s	TRANSISTOR DTA114EK
Q215	8-729-902-96	s	TRANSISTOR FMS1
Q300	8-729-905-18	s	TRANSISTOR DTC144EU
Q301	8-729-905-23	s	TRANSISTOR 2SA1576-R
R038	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W
R039	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W
R222	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R223	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R283	1-217-671-11	s	METAL, CHIP 1 5% 1/10W

(SS-43P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R284	1-217-671-11	s	METAL, CHIP 1 5% 1/10W
R285	1-217-671-11	s	METAL, CHIP 1 5% 1/10W
RV002	1-230-873-11	s	RES, ADJ, METAL 47K
RV201	1-230-869-11	s	RES, ADJ, METAL 4.7K
TH001	1-800-200-00	s	THERMISTOR S-3K
TP001	1-535-622-11	o	PIN, TERMINAL
TP002	1-535-622-11	o	PIN, TERMINAL
X001	1-577-116-21	s	CRYSTAL 16MHz

SY-153P BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-162-A	o	MOUNTED CIRCUIT BOARD, SY-153P
1pc	7-621-759-35	s	+PSW, 2.6X5
C1	1-126-154-11	s	ELECT 47uF 20% 6.3V
C2	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C4	1-126-157-11	s	ELECT 10uF 20% 16V
C5	1-125-513-11	s	DOUBLE LAYERS 0.047FARAD 5.5V
C6	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C8	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C10	1-126-153-11	s	ELECT 22uF 20% 6.3V
C12	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C13	1-124-248-00	s	ELECT 22uF 20% 35V
C23	1-125-579-11	s	DOUBLE LAYERS 0.1FARAD 5.5V
C24	1-126-094-11	s	ELECT 4.7uF 20% 35V
C25	1-131-353-00	s	TANTALUM 10uF 10% 35V
C26	1-124-242-00	s	ELECT 33uF 20% 25V
C28	1-124-584-00	s	ELECT 100uF 20% 10V
CN1	1-506-493-11	s	CONNECTOR, 14P, MALE
CN2	1-506-474-11	s	CONNECTOR, 9P, MALE
CN3	1-506-484-11	s	CONNECTOR, 5P, MALE
CN4	1-566-764-11	o	CONNECTOR, 9P, MALE
CN5	1-564-019-31	o	CONNECTOR, 9P, FEMALE
CN6	1-566-762-11	o	CONNECTOR, 7P, MALE
D2	8-719-400-18	s	DIODE MA152WK
D3	8-719-400-18	s	DIODE MA152WK
D4	8-719-981-01	s	DIODE ERA81-004
D5	8-719-911-19	s	DIODE 1SS119
D6	8-719-400-18	s	DIODE MA152WK
D7	8-719-400-18	s	DIODE MA152WK
IC1	8-759-151-00	s	IC UPD75516GF-146-3B9
IC2	8-759-946-03	s	IC S-8054ALR-LN-S
IC3	8-759-937-54	s	IC S-81250HG-RD-S
IC4	8-759-100-93	s	IC UPC393G2
IC5	8-759-008-82	s	IC MC14013BF
IC6	8-759-008-82	s	IC MC14013BF
L1	1-408-765-21	s	INDUCTOR, CHIP 1uH
Q1	8-729-901-01	s	TRANSISTOR DTC144EK
Q2	8-729-901-01	s	TRANSISTOR DTC144EK
Q3	8-729-216-22	s	TRANSISTOR 2SA1162
Q4	8-729-100-66	s	TRANSISTOR 2SC1623
Q5	8-729-902-96	s	TRANSISTOR FMS1
Q6	8-729-903-82	s	TRANSISTOR FMW2
Q7	8-729-100-66	s	TRANSISTOR 2SC1623
Q8	8-729-901-01	s	TRANSISTOR DTC144EK
Q9	8-729-901-06	s	TRANSISTOR DTA144EK
Q10	8-729-901-01	s	TRANSISTOR DTC144EK
Q11	8-729-901-06	s	TRANSISTOR DTA144EK
Q12	8-729-119-77	s	TRANSISTOR 2SA1175-FEK
Q13	8-729-901-01	s	TRANSISTOR DTC144EK
Q14	8-729-901-06	s	TRANSISTOR DTA144EK
Q15	8-729-901-01	s	TRANSISTOR DTC144EK
Q16	8-729-216-22	s	TRANSISTOR 2SA1162
R37	1-216-692-11	s	METAL, CHIP 51K 0.5% 1/10W
R38	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R39	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R40	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

(SY-153P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R41	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R70	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R97	1-216-630-11	s	METAL, CHIP 130 0.5% 1/10W
R98	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
RV1	1-230-870-11	s	RES, ADJ, METAL 10K
X1	1-577-291-11	s	RESONATOR, CERAMIC 4.19MHz

VA-96 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-031-A	o	MOUNTED CIRCUIT BOARD, VA-96
1pc	3-744-352-01	o	SHIELD, VA
C1	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C2	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C3	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C4	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C5	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C6	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C15	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C16	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C17	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C18	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C52	1-126-162-11	s	ELECT 3.3uF 20% 50V
C53	1-126-162-11	s	ELECT 3.3uF 20% 50V
C72	1-126-162-11	s	ELECT 3.3uF 20% 50V
C73	1-126-162-11	s	ELECT 3.3uF 20% 50V
CN2	1-506-482-11	s	CONNECTOR, 3P, MALE
D51	8-719-800-76	s	DIODE 1SS226
D52	8-719-800-76	s	DIODE 1SS226
D71	8-719-800-76	s	DIODE 1SS226
D72	8-719-800-76	s	DIODE 1SS226
IC51	8-759-111-56	s	IC UPC4572G2
IC52	8-759-111-56	s	IC UPC4572G2
IC71	8-759-111-56	s	IC UPC4572G2
IC72	8-759-111-56	s	IC UPC4572G2
L13	1-408-785-21	s	INDUCTOR, CHIP 47uH
L14	1-408-785-21	s	INDUCTOR, CHIP 47uH
L51	1-408-776-00	s	INDUCTOR, CHIP 8.2uH
L52	1-408-776-00	s	INDUCTOR, CHIP 8.2uH
L71	1-408-776-00	s	INDUCTOR, CHIP 8.2uH
L72	1-408-776-00	s	INDUCTOR, CHIP 8.2uH
L91	1-408-765-21	s	INDUCTOR, CHIP 1uH
Q91	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q92	8-729-216-22	s	TRANSISTOR 2SA1162
R45	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R46	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R51	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R52	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W
R53	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W
R54	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R56	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R57	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R58	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R59	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R60	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R62	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R63	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R64	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R65	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R66	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R71	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R72	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W
R73	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W
R74	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R76	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R77	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

(VA-96 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R78	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R79	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R80	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R82	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R83	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R84	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R85	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R86	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
S1	1-572-301-11	s	SWITCH, SLIDE
S2	1-572-301-11	s	SWITCH, SLIDE

VA-102P BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-163-A	o	MOUNTED CIRCUIT BOARD, VA-102P
C11	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C12	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C13	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C14	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C21	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C32	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C33	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
CN6	1-565-879-11	s	CONNECTOR, PC BOARD 7P, MALE
IC31	1-464-601-11	s	CIRCUIT UNIT, VA
L11	1-408-785-21	s	INDUCTOR, CHIP 47uH
L12	1-408-785-21	s	INDUCTOR, CHIP 47uH
L21	1-408-784-11	s	INDUCTOR, CHIP 39uH
Q21	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q31	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q32	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q33	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q34	8-729-201-27	s	TRANSISTOR 2SC2715-Y
R21	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R22	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R43	1-216-631-11	s	METAL, CHIP 150 0.5% 1/10W
R44	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
RV31	1-228-471-00	s	RES, ADJ, METAL 1K
RV32	1-228-471-00	s	RES, ADJ, METAL 1K

Note: Plese see pages 14-11 through 14-13 for parts that
are not listed in the parts list.

VO-32P BOARD

This board includes the FL-103 Board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-157-A	o	MOUNTED CIRCUIT BOARD, VO-32P
2pcs	1-535-622-11	o	PIN, TERMINAL
C205	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C206	1-163-986-00	s	CERAMIC, CHIP 0.027uF 10% 25V
C207	1-162-938-11	s	CERAMIC, CHIP 7PF 50V
C209	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C400	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C405	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C411	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C413	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C414	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C415	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C416	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C417	1-162-997-11	s	CERAMIC, CHIP 10PF 50V
C418	1-163-123-00	s	CERAMIC, CHIP 180PF 5% 50V
C419	1-162-962-11	s	CERAMIC, CHIP 470PF 10% 50V
C420	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C421	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C422	1-135-159-21	s	TANTALUM, CHIP 10uF 10% 20V
C427	1-135-180-21	s	TANTALUM, CHIP 3.3uF 10% 10V
C428	1-135-201-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C429	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C430	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C433	1-162-923-11	s	CERAMIC, CHIP 47PF 5% 50V
C434	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C435	1-164-145-11	s	CERAMIC, CHIP 390PF 5% 50V
C436	1-162-959-11	s	CERAMIC, CHIP 330PF 5% 50V
C437	1-162-721-11	s	CERAMIC, CHIP 300PF 1% 50V
C439	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C442	1-135-180-21	s	TANTALUM, CHIP 3.3uF 10% 10V
C444	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C445	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C448	1-135-162-21	s	TANTALUM, CHIP 33uF 10% 6.3V
C450	1-162-950-11	s	CERAMIC, CHIP 56PF 5% 50V
C452	1-126-603-11	s	ELECT 4.7uF 20% 35V
C454	1-126-603-11	s	ELECT 4.7uF 20% 35V
C456	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C459	1-126-603-11	s	ELECT 4.7uF 20% 35V
C460	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C462	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C463	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C466	1-163-005-11	s	CERAMIC, CHIP 470PF 10% 50V
C469	1-135-201-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C470	1-135-201-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C473	1-162-953-11	s	CERAMIC, CHIP 100PF 5% 50V
C475	1-126-207-11	s	ELECT 33uF 20% 4V
C476	1-162-945-11	s	CERAMIC, CHIP 22PF 5% 50V
C477	1-162-954-11	s	CERAMIC, CHIP 120PF 5% 50V
C481	1-162-952-11	s	CERAMIC, CHIP 82PF 5% 50V
C482	1-162-948-11	s	CERAMIC, CHIP 39PF 5% 50V
C483	1-163-115-00	s	CERAMIC, CHIP 82PF 5% 50V
C485	1-162-923-11	s	CERAMIC, CHIP 47PF 5% 50V
C486	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C488	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C490	1-162-959-11	s	CERAMIC, CHIP 330PF 5% 50V
C491	1-162-956-11	s	CERAMIC, CHIP 180PF 5% 50V
C492	1-162-953-11	s	CERAMIC, CHIP 100PF 5% 50V

(VO-32P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C495	1-162-917-11	s	CERAMIC, CHIP 15PF 5% 50V
C496	1-162-944-11	s	CERAMIC, CHIP 18PF 5% 50V
C497	1-107-204-00	s	MICA 12PF 5% 500V
C499	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C500	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C501	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C502	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C505	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C506	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C507	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C510	1-162-956-11	s	CERAMIC, CHIP 180PF 5% 50V
C512	1-162-941-11	s	CERAMIC, CHIP 10PF 50V
C514	1-162-910-11	s	CERAMIC, CHIP 5PF 50V
C515	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C516	1-162-955-11	s	CERAMIC, CHIP 150PF 5% 50V
C517	1-162-955-11	s	CERAMIC, CHIP 150PF 5% 50V
C518	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C522	1-162-945-11	s	CERAMIC, CHIP 22PF 5% 50V
C524	1-162-944-11	s	CERAMIC, CHIP 18PF 5% 50V
C526	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C531	1-162-955-11	s	CERAMIC, CHIP 150PF 5% 50V
C532	1-162-944-11	s	CERAMIC, CHIP 18PF 5% 50V
C534	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C535	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C536	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C540	1-162-950-11	s	CERAMIC, CHIP 56PF 5% 50V
C541	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C542	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C545	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C547	1-162-944-11	s	CERAMIC, CHIP 18PF 5% 50V
C551	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C554	1-107-048-00	s	MICA 6.8PF 500V
CN401	1-566-763-11	o	CONNECTOR, 8P, MALE
CN402	1-566-764-11	o	CONNECTOR, 9P, MALE
CN403	1-565-879-11	s	CONNECTOR, PC BOARD 7P, MALE
CN404	1-565-882-11	o	CONNECTOR, PC BOARD 10P, MALE
CN405	1-566-766-11	o	CONNECTOR, 11P, MALE
CN407	1-633-819-11	o	WIRE, FLEXIBLE CARD FL-103
CN408	1-569-035-11	s	CONNECTOR, FPC 30P
CV401	1-141-331-11	s	CAP, TRIMMER, CHIP 30PF
CV402	1-141-331-11	s	CAP, TRIMMER, CHIP 30PF
D201	8-719-941-09	s	DIODE DAP202U
D202	8-719-123-85	s	DIODE 1SS304
D204	8-719-123-85	s	DIODE 1SS304
D205	8-719-123-85	s	DIODE 1SS304
D401	8-719-123-85	s	DIODE 1SS304
D404	8-719-123-85	s	DIODE 1SS304
D405	8-719-123-85	s	DIODE 1SS304
D406	8-719-941-09	s	DIODE DAP202U
D407	8-719-123-85	s	DIODE 1SS304
D409	8-719-123-85	s	DIODE 1SS304
D411	8-719-949-46	s	DIODE 1T32
D413	8-719-123-85	s	DIODE 1SS304
D414	8-719-123-85	s	DIODE 1SS304
D417	8-719-123-85	s	DIODE 1SS304
D418	8-719-800-76	s	DIODE 1SS226
D419	8-719-123-85	s	DIODE 1SS304

Note: Plese see pages 14-11 through 14-13 for parts that
are not listed in the parts list.

(VO-32P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D420	8-719-123-85	s	DIODE 1SS304
D421	8-719-123-85	s	DIODE 1SS304
D422	8-719-123-85	s	DIODE 1SS304
D423	8-719-123-85	s	DIODE 1SS304
D424	8-719-123-85	s	DIODE 1SS304
D425	8-719-123-85	s	DIODE 1SS304
FL401	1-236-540-11	s	FILTER, LOW-PASS
FL402	1-236-539-11	s	FILTER, LOW-PASS
IC403	8-759-710-29	s	IC NJM2235M
IC404	8-759-710-29	s	IC NJM2235M
IC405	8-759-009-22	s	IC MC14094BF
IC406	8-759-970-80	s	IC MB673198U
IC407	8-759-140-26	s	IC UPD6145G-601
IC408	8-759-710-12	s	IC NJM2230M
IC409	8-752-031-01	s	IC CXA1047M
IC410	8-752-032-97	s	IC CXA1230AR
L201	1-410-391-11	s	INDUCTOR, CHIP 68uH
L401	1-412-058-11	s	INDUCTOR, CHIP 10uH
L402	1-408-797-11	s	INDUCTOR, CHIP 470uH
L403	1-410-390-11	s	INDUCTOR, CHIP 56uH
L404	1-410-382-31	s	INDUCTOR, CHIP 12uH
L405	1-410-380-31	s	INDUCTOR, CHIP 8.2uH
L406	1-410-390-11	s	INDUCTOR, CHIP 56uH
L407	1-410-387-11	s	INDUCTOR, CHIP 33uH
L408	1-412-058-11	s	INDUCTOR, CHIP 10uH
L409	1-408-791-00	s	INDUCTOR, CHIP 150uH
L410	1-410-388-21	s	INDUCTOR, CHIP 39uH
L411	1-410-386-11	s	INDUCTOR, CHIP 27uH
L412	1-410-380-31	s	INDUCTOR, CHIP 8.2uH
L413	1-412-058-11	s	INDUCTOR, CHIP 10uH
L414	1-412-058-11	s	INDUCTOR, CHIP 10uH
L416	1-410-393-11	s	INDUCTOR, CHIP 100uH
L417	1-410-391-11	s	INDUCTOR, CHIP 68uH
L419	1-410-378-11	s	INDUCTOR, CHIP 5.6uH
L421	1-410-382-31	s	INDUCTOR, CHIP 12uH
L431	1-410-389-31	s	INDUCTOR, CHIP 47uH
L432	1-408-420-00	s	INDUCTOR 82uH
Q207	8-729-117-32	s	TRANSISTOR 2SC4177
Q209	8-729-117-32	s	TRANSISTOR 2SC4177
Q211	8-729-905-96	s	TRANSISTOR DTA114TU
Q212	8-729-905-96	s	TRANSISTOR DTA114TU
Q213	8-729-905-18	s	TRANSISTOR DTC144EU
Q214	8-729-905-09	s	TRANSISTOR DTA144WU
Q215	8-729-905-12	s	TRANSISTOR DTA144EU
Q220	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q221	8-729-117-32	s	TRANSISTOR 2SC4177
Q225	8-729-905-18	s	TRANSISTOR DTC144EU
Q402	8-729-905-57	s	TRANSISTOR DTA124EU
Q403	8-729-905-57	s	TRANSISTOR DTA124EU
Q404	8-729-905-18	s	TRANSISTOR DTC144EU
Q406	8-729-905-18	s	TRANSISTOR DTC144EU
Q407	8-729-117-32	s	TRANSISTOR 2SC4177
Q408	8-729-905-18	s	TRANSISTOR DTC144EU
Q409	8-729-905-18	s	TRANSISTOR DTC144EU
Q410	8-729-117-32	s	TRANSISTOR 2SC4177
Q411	8-729-905-12	s	TRANSISTOR DTA144EU
Q412	8-729-117-32	s	TRANSISTOR 2SC4177

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Ref. No. or Q'ty	Part No.	SP	Description
Q415	8-729-905-18	s	TRANSISTOR DTC144EU
Q416	8-729-905-18	s	TRANSISTOR DTC144EU
Q417	8-729-905-18	s	TRANSISTOR DTC144EU
Q418	8-729-905-18	s	TRANSISTOR DTC144EU
Q419	8-729-905-18	s	TRANSISTOR DTC144EU
Q420	8-729-905-12	s	TRANSISTOR DTA144EU
Q422	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q424	8-729-202-38	s	TRANSISTOR 2SC3326N
Q426	8-729-202-38	s	TRANSISTOR 2SC3326N
Q427	8-729-117-32	s	TRANSISTOR 2SC4177
Q428	8-729-907-39	s	TRANSISTOR IMD2
Q429	8-729-117-32	s	TRANSISTOR 2SC4177
Q430	8-729-216-22	s	TRANSISTOR 2SA1162
Q431	8-729-905-18	s	TRANSISTOR DTC144EU
Q432	8-729-905-18	s	TRANSISTOR DTC144EU
Q433	8-729-905-12	s	TRANSISTOR DTA144EU
Q434	8-729-117-32	s	TRANSISTOR 2SC4177
Q435	8-729-905-18	s	TRANSISTOR DTC144EU
Q436	8-729-905-18	s	TRANSISTOR DTC144EU
Q437	8-729-905-09	s	TRANSISTOR DTA144WU
Q438	8-729-117-32	s	TRANSISTOR 2SC4177
Q439	8-729-117-32	s	TRANSISTOR 2SC4177
Q440	8-729-117-32	s	TRANSISTOR 2SC4177
Q441	8-729-117-32	s	TRANSISTOR 2SC4177
Q442	8-729-117-32	s	TRANSISTOR 2SC4177
Q443	8-729-905-45	s	TRANSISTOR DTA143EU
Q444	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q445	8-729-117-32	s	TRANSISTOR 2SC4177
Q446	8-729-117-32	s	TRANSISTOR 2SC4177
Q447	8-729-117-32	s	TRANSISTOR 2SC4177
Q448	8-729-162-44	s	TRANSISTOR 2SB624-BV4
Q449	8-729-905-18	s	TRANSISTOR DTC144EU
Q450	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q451	8-729-117-32	s	TRANSISTOR 2SC4177
Q452	8-729-117-32	s	TRANSISTOR 2SC4177
Q453	8-729-903-10	s	TRANSISTOR FMW1
Q454	8-729-905-18	s	TRANSISTOR DTC144EU
Q455	8-729-905-12	s	TRANSISTOR DTA144EU
Q456	8-729-117-32	s	TRANSISTOR 2SC4177
Q460	8-729-117-32	s	TRANSISTOR 2SC4177
Q461	8-729-904-07	s	TRANSISTOR FMG2
Q462	8-729-905-18	s	TRANSISTOR DTC144EU
Q463	8-729-905-12	s	TRANSISTOR DTA144EU
Q464	8-729-117-32	s	TRANSISTOR 2SC4177
Q465	8-729-117-32	s	TRANSISTOR 2SC4177
Q466	8-729-117-32	s	TRANSISTOR 2SC4177
Q467	8-729-905-18	s	TRANSISTOR DTC144EU
Q468	8-729-905-18	s	TRANSISTOR DTC144EU
Q469	8-729-216-22	s	TRANSISTOR 2SA1162
Q470	8-729-117-32	s	TRANSISTOR 2SC4177
Q471	8-729-905-18	s	TRANSISTOR DTC144EU
Q472	8-729-216-22	s	TRANSISTOR 2SA1162
Q473	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q474	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q475	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q476	8-729-117-32	s	TRANSISTOR 2SC4177
Q477	8-729-117-32	s	TRANSISTOR 2SC4177
Q478	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q479	8-729-905-12	s	TRANSISTOR DTA144EU

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
Q480	8-729-905-18	s	TRANSISTOR DTC144EU
Q481	8-729-905-12	s	TRANSISTOR DTA144EU
Q482	8-729-905-18	s	TRANSISTOR DTC144EU
Q483	8-729-905-18	s	TRANSISTOR DTC144EU
Q485	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q486	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q487	8-729-905-18	s	TRANSISTOR DTC144EU
Q488	8-729-905-57	s	TRANSISTOR DTA124EU
Q489	8-729-905-57	s	TRANSISTOR DTA124EU
Q490	8-729-905-18	s	TRANSISTOR DTC144EU
Q491	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q492	8-729-905-18	s	TRANSISTOR DTC144EU
Q493	8-729-905-18	s	TRANSISTOR DTC144EU
Q497	8-729-905-18	s	TRANSISTOR DTC144EU
Q498	8-729-905-12	s	TRANSISTOR DTA144EU
Q499	8-729-905-12	s	TRANSISTOR DTA144EU
Q500	8-729-117-32	s	TRANSISTOR 2SC4177
Q501	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q502	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q503	8-729-117-32	s	TRANSISTOR 2SC4177
Q504	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q505	8-729-117-32	s	TRANSISTOR 2SC4177
Q506	8-729-905-18	s	TRANSISTOR DTC144EU
Q507	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q509	8-729-117-32	s	TRANSISTOR 2SC4177
Q510	8-729-117-32	s	TRANSISTOR 2SC4177
Q513	8-729-905-12	s	TRANSISTOR DTA144EU
Q514	8-729-900-65	s	TRANSISTOR DTA144ES
R218	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R219	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R220	1-216-855-11	s	METAL, CHIP 680K 5% 1/16W
R222	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R224	1-216-842-11	s	METAL, CHIP 56K 5% 1/16W
R225	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R229	1-216-842-11	s	METAL, CHIP 56K 5% 1/16W
R232	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R233	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R237	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R238	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R240	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R303	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R304	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R306	1-216-828-11	s	METAL, CHIP 3.9K 5% 1/16W
R307	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R308	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R310	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R311	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R312	1-216-810-11	s	METAL, CHIP 120 5% 1/16W
R313	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R314	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R315	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R316	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R317	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R318	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R319	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R320	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R321	1-216-814-11	s	METAL, CHIP 270 5% 1/16W
R322	1-216-828-11	s	METAL, CHIP 3.9K 5% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R323	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R324	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R325	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R326	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R327	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R328	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R329	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R330	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R331	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R334	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R335	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R337	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R338	1-216-848-11	s	METAL, CHIP 180K 5% 1/16W
R340	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R341	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R342	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R352	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R354	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R356	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R357	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R358	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R359	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R360	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R363	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R364	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R365	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R366	1-216-820-11	s	METAL, CHIP 820 5% 1/16W
R367	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R368	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R369	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R370	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R375	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R376	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R377	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R378	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R379	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R380	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R381	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R382	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R386	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R389	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R390	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R391	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R392	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R393	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R394	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R395	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R396	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R397	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R398	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R400	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R401	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R402	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R403	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R404	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R405	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R406	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R407	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R408	1-216-828-11	s	METAL, CHIP 3.9K 5% 1/16W

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
R409	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R410	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R411	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R412	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R413	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R414	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R415	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R416	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R417	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R420	1-216-842-11	s	METAL, CHIP 56K 5% 1/16W
R421	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R422	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R423	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R424	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R425	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R426	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R427	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R428	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R429	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R430	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R431	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R432	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R433	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R434	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R435	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R436	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R438	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R440	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R441	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R442	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R444	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R445	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R446	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R449	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R450	1-216-832-11	s	METAL, CHIP 8.2K 5% 1/16W
R451	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R455	1-216-848-11	s	METAL, CHIP 180K 5% 1/16W
R458	1-216-847-11	s	METAL, CHIP 150K 5% 1/16W
R459	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R460	1-216-848-11	s	METAL, CHIP 180K 5% 1/16W
R461	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R462	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R463	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R464	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R465	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R466	1-216-847-11	s	METAL, CHIP 150K 5% 1/16W
R467	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R468	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R469	1-216-851-11	s	METAL, CHIP 330K 5% 1/16W
R471	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R472	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R473	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R476	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R479	1-216-842-11	s	METAL, CHIP 56K 5% 1/16W
R480	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R481	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R482	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R483	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R484	1-216-816-11	s	METAL, CHIP 390 5% 1/16W

(VO-32P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R485	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R486	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R487	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R488	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R489	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R490	1-216-842-11	s	METAL, CHIP 56K 5% 1/16W
R491	1-218-272-11	s	METAL, CHIP 5.1K 5% 1/16W
R492	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R493	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R494	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R495	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R496	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R498	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R499	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R500	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R501	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R502	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R503	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R504	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R505	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R506	1-216-846-11	s	METAL, CHIP 120K 5% 1/16W
R507	1-216-847-11	s	METAL, CHIP 150K 5% 1/16W
R508	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R509	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R510	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R511	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R512	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R513	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R514	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R515	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R516	1-216-832-11	s	METAL, CHIP 8.2K 5% 1/16W
R517	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R518	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R519	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R521	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R522	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R523	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R525	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R526	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R527	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R528	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R529	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R530	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R531	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R532	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R533	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R534	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R535	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R536	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R537	1-216-820-11	s	METAL, CHIP 820 5% 1/16W
R538	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R539	1-216-820-11	s	METAL, CHIP 820 5% 1/16W
R540	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R541	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R543	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R544	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R545	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R546	1-216-814-11	s	METAL, CHIP 270 5% 1/16W
R547	1-216-814-11	s	METAL, CHIP 270 5% 1/16W

Note: Plese see pages 14-11 through 14-13 for parts that
are not listed in the parts list.

(VO-32P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R548	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R549	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R551	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R552	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R553	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R554	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R555	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R556	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R557	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R558	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R559	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R561	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R562	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R563	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R564	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R565	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R566	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R567	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R568	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R569	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R570	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R571	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R572	1-216-820-11	s	METAL, CHIP 820 5% 1/16W
R579	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R581	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R582	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R583	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R584	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R585	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R586	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R587	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R591	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R592	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R593	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R594	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R595	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R596	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R597	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
RV401	1-230-867-11	s	RES, ADJ, METAL 1K
RV404	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV405	1-230-867-11	s	RES, ADJ, METAL 1K
RV406	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV407	1-230-871-11	s	RES, ADJ, METAL 22K
RV408	1-230-870-11	s	RES, ADJ, METAL 10K
RV409	1-230-870-11	s	RES, ADJ, METAL 10K
RV410	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV416	1-230-871-11	s	RES, ADJ, METAL 22K
RV417	1-230-874-11	s	RES, ADJ, METAL 100K

VO-33P BOARD

This board includes the FL-104 Board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7062-158-A	o	MOUNTED CIRCUIT BOARD, VO-33P
2pcs	1-535-622-11	o	PIN, TERMINAL
C202	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C203	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C204	1-135-181-21	s	TANTALUM, CHIP 4.7uF 10% 6.3V
C206	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C208	1-162-950-11	s	CERAMIC, CHIP 56PF 5% 50V
C209	1-162-962-11	s	CERAMIC, CHIP 470PF 10% 50V
C211	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C212	1-135-170-21	s	TANTALUM, CHIP 6.8uF 10% 4V
C214	1-162-950-11	s	CERAMIC, CHIP 56PF 5% 50V
C215	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C219	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C220	1-162-945-11	s	CERAMIC, CHIP 22PF 5% 50V
C221	1-162-950-11	s	CERAMIC, CHIP 56PF 5% 50V
C222	1-135-157-21	s	TANTALUM, CHIP 10uF 10% 6.3V
C223	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C227	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C228	1-162-955-11	s	CERAMIC, CHIP 150PF 5% 50V
C229	1-135-157-21	s	TANTALUM, CHIP 10uF 10% 6.3V
C230	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C231	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C232	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C233	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C235	1-162-935-11	s	CERAMIC, CHIP 4PF 50V
C236	1-135-181-21	s	TANTALUM, CHIP 4.7uF 10% 6.3V
C600	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C601	1-162-949-11	s	CERAMIC, CHIP 47PF 5% 50V
C602	1-164-182-11	s	CERAMIC CHIP 3300PF 10% 100V
C603	1-126-603-11	s	ELECT 4.7uF 20% 35V
C604	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C605	1-163-003-11	s	CERAMIC 330PF 10% 50VW
C606	1-163-088-00	s	CERAMIC, CHIP 5PF 50V
C607	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C609	1-163-131-00	s	CERAMIC, CHIP 390PF 5% 50V
C610	1-163-113-00	s	CERAMIC, CHIP 68PF 5% 50V
C612	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C613	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C615	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C616	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C618	1-162-955-11	s	CERAMIC, CHIP 150PF 5% 50V
C620	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C621	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C622	1-135-170-21	s	TANTALUM, CHIP 6.8uF 10% 4V
C623	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C624	1-135-151-21	s	TANTALUM, CHIP 4.7uF 20% 4V
C625	1-162-961-11	s	CERAMIC, CHIP 330PF 10% 50V
C626	1-162-961-11	s	CERAMIC, CHIP 330PF 10% 50V
C627	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C628	1-162-917-11	s	CERAMIC, CHIP 15PF 5% 50V
C629	1-163-108-00	s	CERAMIC, CHIP 43PF 5% 50V
C630	1-135-073-00	s	TANTALUM, CHIP 0.33uF 10% 35V
C632	1-162-950-11	s	CERAMIC, CHIP 56PF 5% 50V
C633	1-162-953-11	s	CERAMIC, CHIP 100PF 5% 50V
C634	1-162-957-11	s	CERAMIC, CHIP 220PF 5% 50V
C635	1-162-951-11	s	CERAMIC, CHIP 68PF 5% 50V
C637	1-164-232-11	s	CERAMIC 0.01uF 10% 100V

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

(VO-33P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C639	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C640	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C641	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C642	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C643	1-135-181-21	s	TANTALUM, CHIP 4.7uF 10% 6.3V
C644	1-162-951-11	s	CERAMIC, CHIP 68PF 5% 50V
C645	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C648	1-162-947-11	s	CERAMIC, CHIP 33PF 5% 50V
C649	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C650	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C651	1-162-965-11	s	CERAMIC, CHIP 0.0015uF 10% 50V
C654	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C655	1-163-118-00	s	CERAMIC, CHIP 110PF 5% 50V
C656	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C657	1-163-205-00	s	CERAMIC, CHIP 0.001uF 5% 50V
C658	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C659	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C660	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C661	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C662	1-162-936-11	s	CERAMIC, CHIP 5PF 50V
C663	1-135-180-21	s	TANTALUM, CHIP 3.3uF 10% 10V
C664	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C666	1-162-961-11	s	CERAMIC, CHIP 330PF 10% 50V
C667	1-162-953-11	s	CERAMIC, CHIP 100PF 5% 50V
C668	1-162-961-11	s	CERAMIC, CHIP 330PF 10% 50V
C671	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C672	1-162-963-11	s	CERAMIC, CHIP 680PF 10% 50V
C675	1-162-951-11	s	CERAMIC, CHIP 68PF 5% 50V
C676	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C677	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C678	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C679	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C680	1-162-953-11	s	CERAMIC, CHIP 100PF 5% 50V
C681	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C682	1-124-778-00	s	ELECT 22uF 20% 6.3V
C683	1-124-778-00	s	ELECT 22uF 20% 6.3V
C684	1-126-603-11	s	ELECT 4.7uF 20% 35V
C687	1-135-170-21	s	TANTALUM, CHIP 6.8uF 10% 4V
C688	1-126-603-11	s	ELECT 4.7uF 20% 35V
C689	1-131-347-00	s	TANTALUM 1uF 10% 35V
C690	1-135-181-21	s	TANTALUM, CHIP 4.7uF 10% 6.3V
C691	1-162-944-11	s	CERAMIC, CHIP 18PF 5% 50V
C692	1-162-947-11	s	CERAMIC, CHIP 33PF 5% 50V
C702	1-163-111-00	s	CERAMIC, CHIP 56PF 5% 50V
C708	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C709	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C710	1-163-005-11	s	CERAMIC, CHIP 470PF 10% 50V
C713	1-162-942-11	s	CERAMIC, CHIP 12PF 5% 50V
C719	1-162-955-11	s	CERAMIC, CHIP 150PF 5% 50V
C720	1-162-942-11	s	CERAMIC, CHIP 12PF 5% 50V
C722	1-135-158-21	s	TANTALUM, CHIP 15uF 10% 4V
C724	1-163-092-00	s	CERAMIC 9PF 0.25PF 50V
C725	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C726	1-162-943-11	s	CERAMIC, CHIP 15PF 5% 50V
C730	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C732	1-163-100-00	s	CERAMIC, CHIP 20PF 5% 50V
C733	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C734	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C738	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

(VO-33P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C739	1-162-959-11	s	CERAMIC, CHIP 330PF 5% 50V
C741	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
CN601	1-633-820-11	o	WIRE, FLEXIBLE CARD FL-104
CV601	1-141-331-11	s	CAP, TRIMMER, CHIP 30PF
CV602	1-141-331-11	s	CAP, TRIMMER, CHIP 30PF
D201	8-719-123-82	s	DIODE 1SS303
D201	8-719-941-09	s	DIODE DAP202U
D202	8-719-123-82	s	DIODE 1SS303
D202	8-719-941-09	s	DIODE DAP202U
D203	8-719-123-82	s	DIODE 1SS303
D203	8-719-941-09	s	DIODE DAP202U
D601	8-719-911-19	s	DIODE 1SS119
D602	8-719-800-76	s	DIODE 1SS226
D603	8-719-400-18	s	DIODE MA152WK
D604	8-719-800-76	s	DIODE 1SS226
D605	8-719-800-76	s	DIODE 1SS226
D609	8-719-123-85	s	DIODE 1SS304
D614	8-719-800-76	s	DIODE 1SS226
D616	8-719-404-40	s	DIODE MA121
D619	8-719-400-18	s	DIODE MA152WK
D620	8-719-123-85	s	DIODE 1SS304
D621	8-719-123-85	s	DIODE 1SS304
D623	8-719-800-76	s	DIODE 1SS226
D624	8-719-404-32	s	DIODE MA141WA
D625	8-719-404-32	s	DIODE MA141WA
DL601	1-415-518-31	s	DELAY LINE 1H/2H
DL603	1-415-696-11	s	DELAY LINE
DL604	1-415-646-11	s	DELAY LINE
FL602	1-236-538-11	s	FILTER, BANDPASS
FL603	1-409-394-11	s	TRAP, CHROMA EMPHASIS 4.4MHz
FL604	1-236-537-11	s	FILTER, BANDPASS
FL605	1-235-632-11	s	FILTER, BANDPASS 3.7MHz
FL606	1-235-633-11	s	FILTER, BANDPASS 5.17MHz
IC201	8-752-032-98	s	IC CXA1231AR
IC202	8-759-103-25	s	IC UPD4053BG
IC203	8-759-100-96	s	IC UPC4558G2
IC204	8-759-908-17	s	IC TL082CPS
IC601	8-759-924-94	s	IC CX22021
IC602	8-752-003-22	s	IC CX20032
IC603	8-759-202-67	s	IC CX20117
IC604	8-752-305-47	s	IC CX23054
IC605	8-759-710-09	s	IC NJM2233AM
IC606	8-759-710-07	s	IC NJM2234M
IC609	8-759-925-60	s	IC BA401
L203	1-410-385-11	s	INDUCTOR, CHIP 22uH
L601	1-410-657-21	s	INDUCTOR, CHIP 180uH
L602	1-410-385-11	s	INDUCTOR, CHIP 22uH
L603	1-410-393-11	s	INDUCTOR, CHIP 100uH
L604	1-410-656-11	s	INDUCTOR, CHIP 150uH
L605	1-410-655-31	s	INDUCTOR, CHIP 120uH
L606	1-410-393-11	s	INDUCTOR, CHIP 100uH
L607	1-412-058-11	s	INDUCTOR, CHIP 10uH
L608	1-410-385-11	s	INDUCTOR, CHIP 22uH
L609	1-410-391-11	s	INDUCTOR, CHIP 68uH
L610	1-410-369-11	s	INDUCTOR, CHIP 1uH
L611	1-410-369-11	s	INDUCTOR, CHIP 1uH

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Ref. No. or Q'ty	Part No.	SP	Description
L612	1-412-058-11	s	INDUCTOR, CHIP 10uH
L613	1-412-058-11	s	INDUCTOR, CHIP 10uH
L614	1-408-777-00	s	INDUCTOR, CHIP 10uH
L616	1-410-388-21	s	INDUCTOR, CHIP 39uH
L617	1-410-386-11	s	INDUCTOR, CHIP 27uH
L620	1-412-058-11	s	INDUCTOR, CHIP 10uH
L621	1-410-393-11	s	INDUCTOR, CHIP 100uH
L623	1-408-776-00	s	INDUCTOR, CHIP 8.2uH
L624	1-410-387-11	s	INDUCTOR, CHIP 33uH
L626	1-410-385-11	s	INDUCTOR, CHIP 22uH
L627	1-410-393-11	s	INDUCTOR, CHIP 100uH
LV601	1-404-594-11	s	COIL, VARIABLE
Q202	8-729-402-42	s	TRANSISTOR UN5213
Q202	8-729-905-18	s	TRANSISTOR DTC144EU
Q204	8-729-402-42	s	TRANSISTOR UN5213
Q204	8-729-905-18	s	TRANSISTOR DTC144EU
Q205	8-729-402-42	s	TRANSISTOR UN5213
Q205	8-729-905-18	s	TRANSISTOR DTC144EU
Q206	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q206	8-729-905-23	s	TRANSISTOR 2SA1576-R
Q207	8-729-109-44	s	TRANSISTOR 2SK94
Q208	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q208	8-729-905-23	s	TRANSISTOR 2SA1576-R
Q209	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q209	8-729-905-23	s	TRANSISTOR 2SA1576-R
Q210	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q210	8-729-905-23	s	TRANSISTOR 2SA1576-R
Q601	8-729-216-22	s	TRANSISTOR 2SA1162
Q602	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q604	8-729-117-32	s	TRANSISTOR 2SC4177
Q605	8-729-905-18	s	TRANSISTOR DTC144EU
Q606	8-729-117-32	s	TRANSISTOR 2SC4177
Q608	8-729-904-07	s	TRANSISTOR FMG2
Q609	8-729-901-01	s	TRANSISTOR DTC144EK
Q610	8-729-904-07	s	TRANSISTOR FMG2
Q612	8-729-901-01	s	TRANSISTOR DTC144EK
Q613	8-729-162-44	s	TRANSISTOR 2SB624-BV4
Q614	8-729-905-12	s	TRANSISTOR DTA144EU
Q615	8-729-905-45	s	TRANSISTOR DTA143EU
Q616	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q617	8-729-117-32	s	TRANSISTOR 2SC4177
Q618	8-729-117-32	s	TRANSISTOR 2SC4177
Q630	8-729-901-01	s	TRANSISTOR DTC144EK
Q631	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q632	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q633	8-729-901-06	s	TRANSISTOR DTA144EK
Q634	8-729-904-07	s	TRANSISTOR FMG2
Q636	8-729-904-20	s	TRANSISTOR FMA2
Q638	8-729-901-06	s	TRANSISTOR DTA144EK
Q639	8-729-901-01	s	TRANSISTOR DTC144EK
Q640	8-729-901-06	s	TRANSISTOR DTA144EK
Q641	8-729-901-06	s	TRANSISTOR DTA144EK
Q644	8-729-901-01	s	TRANSISTOR DTC144EK
Q645	8-729-117-32	s	TRANSISTOR 2SC4177
Q646	8-729-903-10	s	TRANSISTOR FMW1
Q647	8-729-216-22	s	TRANSISTOR 2SA1162
Q648	8-729-230-49	s	TRANSISTOR 2SC2712-YG

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
Q649	8-729-117-32	s	TRANSISTOR 2SC4177
Q650	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q651	8-729-901-06	s	TRANSISTOR DTA144EK
Q652	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q654	8-729-117-32	s	TRANSISTOR 2SC4177
Q655	8-729-905-15	s	TRANSISTOR DTC144WU
Q656	8-729-905-18	s	TRANSISTOR DTC144EU
Q657	8-729-905-12	s	TRANSISTOR DTA144EU
Q662	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q663	8-729-904-07	s	TRANSISTOR FMG2
Q664	8-729-904-20	s	TRANSISTOR FMA2
Q665	8-729-901-01	s	TRANSISTOR DTC144EK
R101	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R106	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R107	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R109	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R112	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R113	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R114	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R115	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R117	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R118	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R122	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R123	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R124	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R125	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R126	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R127	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R128	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R129	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
R130	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
R131	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R143	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R144	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R145	1-249-437-11	s	CARBON 47K 5% 1/4W
R146	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R147	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R148	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R149	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R150	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R152	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R201	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R205	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R206	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R207	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R208	1-216-855-11	s	METAL, CHIP 680K 5% 1/16W
R209	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R210	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R211	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R212	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R213	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R214	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R215	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R216	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R217	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R218	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R219	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R220	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R221	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R223	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R224	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R225	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R226	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R228	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R229	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R230	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R231	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R233	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R234	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R235	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R236	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R238	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R239	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R240	1-216-851-11	s	METAL, CHIP 330K 5% 1/16W
R241	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R242	1-216-842-11	s	METAL, CHIP 56K 5% 1/16W
R243	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R244	1-216-855-11	s	METAL, CHIP 680K 5% 1/16W
R245	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R246	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R247	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R248	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R249	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R250	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R251	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R252	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R253	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R254	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R255	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R256	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R257	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R258	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R260	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R261	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R602	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R603	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R604	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R605	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R606	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R607	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R608	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R609	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R610	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R611	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R613	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R614	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R615	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R619	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R620	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R621	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R622	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R623	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R624	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R625	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R626	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R627	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R628	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R629	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R630	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R632	1-216-848-11	s	METAL, CHIP 180K 5% 1/16W
R637	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R638	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R639	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R640	1-216-854-11	s	METAL, CHIP 560K 5% 1/16W
R641	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R644	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R647	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R649	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R650	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R651	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R652	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R653	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R654	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R655	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R656	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R657	1-216-832-11	s	METAL, CHIP 8.2K 5% 1/16W
R658	1-216-844-11	s	METAL, CHIP 82K 5% 1/16W
R659	1-216-846-11	s	METAL, CHIP 120K 5% 1/16W
R660	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R661	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R662	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R663	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R664	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R665	1-216-828-11	s	METAL, CHIP 3.9K 5% 1/16W
R666	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R667	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R668	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R669	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R673	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R674	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R675	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R676	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R677	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R678	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R679	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R680	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R681	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R682	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R683	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R684	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R685	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R686	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R688	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R691	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R692	1-216-801-11	s	METAL, CHIP 22 5% 1/16W
R693	1-216-810-11	s	METAL, CHIP 120 5% 1/16W
R694	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R695	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R696	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R697	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R698	1-216-814-11	s	METAL, CHIP 270 5% 1/16W
R699	1-216-810-11	s	METAL, CHIP 120 5% 1/16W
R700	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R702	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R707	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R708	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W

Note: Plese see pages 14-11 through 14-13 for parts that
are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
R709	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R710	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R711	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R712	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R713	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R714	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R715	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R716	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R749	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R750	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R752	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R755	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R756	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R757	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R758	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R759	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R760	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R761	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R762	1-216-820-11	s	METAL, CHIP 820 5% 1/16W
R765	1-216-820-11	s	METAL, CHIP 820 5% 1/16W
R771	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R772	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R776	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R779	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R787	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R789	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R790	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R794	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R795	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R796	1-216-832-11	s	METAL, CHIP 8.2K 5% 1/16W
R797	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R799	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
RV201	1-230-867-11	s	RES, ADJ, METAL 1K
RV202	1-230-870-11	s	RES, ADJ, METAL 10K
RV601	1-230-871-11	s	RES, ADJ, METAL 22K
RV602	1-230-871-11	s	RES, ADJ, METAL 22K
RV603	1-230-873-11	s	RES, ADJ, METAL 47K
RV604	1-230-875-21	s	RES, ADJ, METAL 220K
TH201	1-807-752-11	s	THERMISTOR 50
X201	1-567-347-11	s	RESONATOR, CERAMIC 13.301MHz
X601	1-567-504-81	s	CRYSTAL 4.33619MHz

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7048-297-A	s	DRUM ASS'Y, DGU-50A-R
1pc	A-7049-267-A	s	DRUM UPPER ASS'Y, DGR-50-R
1pc	1-535-739-12	s	TERMINAL, SHAFT EARTH
1pc	1-575-620-11	o	WIRE, FLEXIBLE CARD (CC43 to SS43P)
CN011	1-537-142-11	s	TERMINAL BOARD "VIDEO OUT", "AUDIO OUT", "RFU DC OUT"
CN012	1-564-603-11	s	CONNECTOR WITH DC SW 4P, MALE "EXT DC IN"
CN022	1-561-781-11	s	RECEPTACLE, BNC FEMALE "VIDEO OUT"
CN032	1-563-029-21	s	RECEPTACLE, XLR 3P FEMALE "AUDIO CH-1"
CN033	1-563-029-21	s	RECEPTACLE, XLR 3P FEMALE "AUDIO CH-2"
CS001	1-808-505-12	s	SENSOR "CONDENSATION SENSOR"
M902	8-835-331-01	s	MOTOR, DC U-22A "CAPSTAN"
M903	A-7040-160-A	s	MOTOR ASS'Y, "THREADING"
ME001	1-520-495-11	s	METER, LEVEL "PCM1"
ME002	1-520-495-12	s	METER, LEVEL "PCM2/AFM/BATT"
S101	1-552-504-00	s	SWITCH, TOGLE "POWER"
SP001	1-554-312-11	s	SPEAKER (DIA.20), "EAR SPEAKER"

Note: Plese see pages 14-11 through 14-13 for parts that are not listed in the parts list.

14-4. PACKING MATERIAL AND ACCESSORIES

Ref. No. or Q'ty	Part No.	SP	Description
1	X-3744-307-1	s	SUSPENTION ASSY
1	3-744-364-01	o	INDIVIDUAL CARTON
1	3-744-367-01	o	SPACER
1	3-698-917-01	o	BELT, SHOULDER
1	3-701-633-00	s	BAG, POLYETHYLENE
1	3-744-355-01	o	SHAFT, GUIDE
1	3-744-358-01	o	CUSHION (FRONT)
1	3-744-359-01	o	CUSHION (REAR)
1	3-751-770-11	s	MANUAL, INSTRUCTION

14-5. FIXTURE (OPTION)

Part No.	SP	Description
7-700-766-01	o	HEXAGONAL SCREWDRIVER (0.89 mm)
7-741-900-53	o	WIPING CROTH
8-967-992-17	o	ALIGNMENT TAPE, WR2-3CS
8-967-995-07	o	ALIGNMENT TAPE, WR5-1CP
8-967-995-18	o	ALIGNMENT TAPE, WR5-7CE
8-967-995-47	o	ALIGNMENT TAPE, WR5-5CSP
8-967-995-47	o	ALIGNMENT TAPE, WR5-8CSE
J-6080-825-A	o	MODE SELECTOR
J-6080-840-A	o	SMALL ADJUSTMENT MIRROR
J-6082-021-A	o	MODE SELECTOR III CONVERSION CONNECTOR
J-6082-023-A	o	MODE SELECROR III PANEL
Y-2031-001-1	o	CLEANING FLUID

Note: Please see pages 14-11 through 14-13 for parts that are not listed in the parts list.